

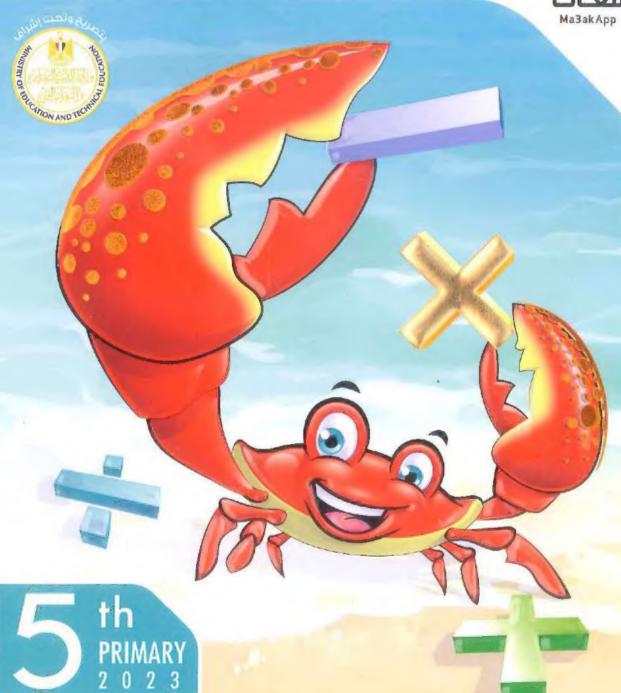
Mathematics

By a group of supervisors

PARENTS' GUIDE

Interactive E-learning Application





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Multiplication with Whole Numbers



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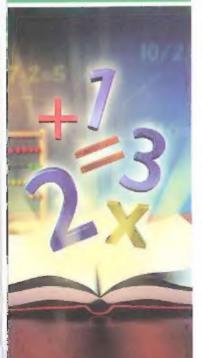
Multiplication and Division with Decimals



Concept 1	Multiplying Decimals	
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Numerical Expressions and Patterns

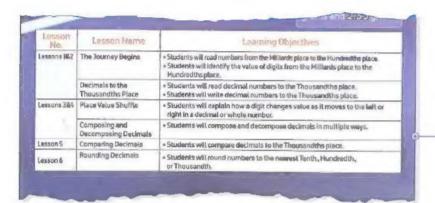


GLOSSARY

Concept 1	Evaluating Numerical Expressions
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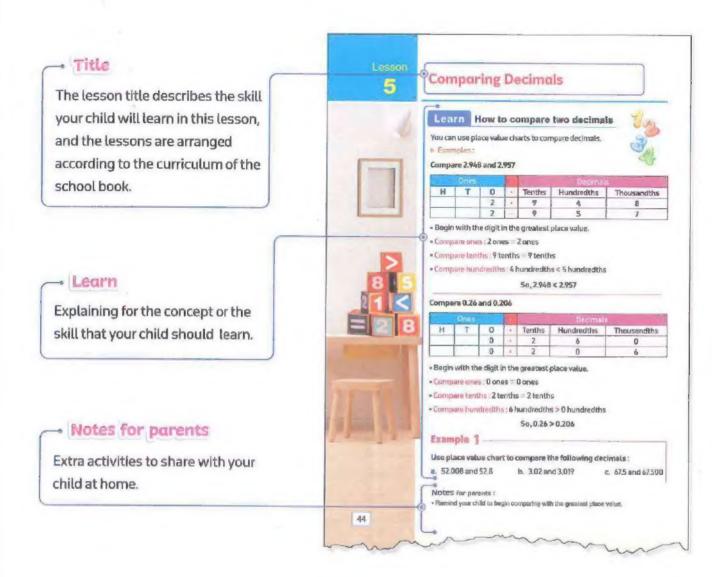
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HOW to use this guide?

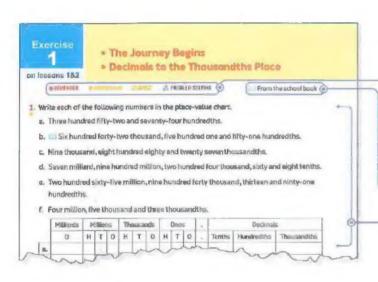


Objectives

Describe the skills your child will learn in each lesson of the unit.



How to use this guide?



Bloom's Taxonomy of cognitive levels

The questions within each exercise are classified according to the levels of Bloom's Pyramid.

From the school book

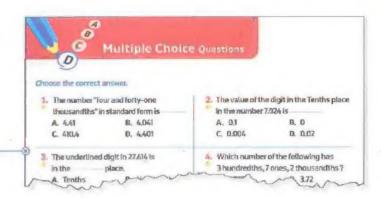
Selected questions from the school book.

Exercise

Miscellaneous questions on the concept or the skill of the lesson.

Multiple Choice Questions

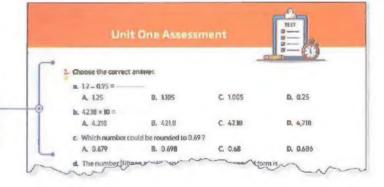
Multiple choice questions to review the concept or the skill of the lesson to reinforce the learning of your child.



Unit's Assessment

After finishing each unit, use the assessment page.

This assessment will give you feedback about your child's level through this unit.



In this revision your child will review on what he/she had learned in primary four.



Choose the correct answer.

a. In the number 325.41, which digit is in the Hundredths place?

A. 1

B. 2

C. 3

D. 4

b. $2 \times [7 \times 4] = [2 \times - -] \times 4$

A. 2

B. 4

C. 5

D. 7

c. 255 ÷ 5 =

A. 11

B. 50

C. 51

D. 55

d. 4.6 = tenths.

A. 0.46

B. 46

C. 460

D. 4,600

e. Round 387,932 to the nearest Hundred.

A. 387,900

B. 388,000

C. 387,930

D. 390,000

f. The GCF of 48 and 56 is

A. 6

B. 8

C. 9

D. 12

2. Complete the following.

is a common multiple of 4 and 5 and lies between 10 and 30.

b. $800 \times 3 =$

c. 64,731 + 59,189 =

d. The difference between 214 and 189 is

e. Skip count by 8 (8,

, 24 , _____ , ____ , 48 , ____]

f. In the bar model

100 35 X

the equation which you can form for it is -

Put (< , > or =).

a. 0.45



c. 82,063 - 14,589

35,896 + 31,568

b. 9,000 thousands



9 millions

d. 187 × 4

700 + 40 + 8

4. Find the result.

5,470 +2,386 b.

27

Bassem reads books in a series of mysteries. Each book has 128 pages. How many pages will Bassem read if he finishes 9 of these books?

1. Complete the following.

- a. The smallest prime number is -
- **b.** 7 + 0.1 + 0.05 =
- c. If m + 25 = 31, then m = -
- d. If $975 \div 3 = 325$, then the dividend is
- e. 354 + [116 + 243] = [354 +] + 243
- f. The value of the digit 4 in the number 3.74 is



Put (√) to the correct statement and (X) to the incorrect statement.

a. $\frac{3}{10}$ is equivalent to 0.30

b. 754,321 < 98,564

c. 0.08 = 0.8

d. $180 \div 2 = 90$

e. The place value of the digit 8 in the number 356.81 is Ones.

f. $17,856 \approx 20,000$ to the nearest Thousand.

3. Write in word form.

- a. 14.3
- b. 6 Ones, 8 Hundredths -

4. Find the result.

a. 5,761 + 12,888 = ---

b. 40 × 30 =

c. 6,060 - 3,488 = -

- d. 1,278 ÷ 6 =
- A train has 896 seats for passengers, if there are 8 carriages on the train and each carriage has the same number of seats, how many passengers can sit in each carriage?

Put (√) to the correct statement and (X) to the incorrect statement.

a. If a-3=7, then a=4

b. 7

140 56

, the area model represents 7×28

c. $7 \times 243 = [7 \times 2] + [7 \times 4] + [7 \times 3]$

d. 32 tenths = 3.2

e. 28.702 ≈ 30.000 to the nearest Ten Thousand.

f. 7.2 > 7.16

Choose the correct answer.

a. Which number is the greatest?

A. 549,300

B. 4,004,030

C. 5,490,003

D. 5,490,030

b. is a multiple of 8.

A. 4

B. 16

C. 18

D. 20

c. Which of the following is the least number possible formed from the digits: 2,7,0,8,4?

A. 2,487

B. 20,847

C. 20,478

D. 87,420

d. The product of 62 × 19 is —

A. 1,148

B. 114

C. 152

D. 1,178

e. The number 18 has — factors.

A. 3

B. 4

C. 6

D. 8

f. Which number is a factor of 14?

B. 4

C. 6

D. 7

3. Arrange the following numbers in an ascending order.

6,785,000 , 5,700,726 , 7,456,232 , 6,670,785 , 5,700,624

4. Put (< , > or =).

a. 5,674 + 2,326



12,562 - 4,562

b. 60 × 40



700×3

c. 368 ÷ 16



d. The common multiple for any numbers



the common factor for any numbers.

5. Find the factors of each of 30 and 36, then find the greatest common factor of them.

1. Match.

a.	is a multiple of 5



2. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. The missing value in the area
 model representing 29 × 16 is 90

	10	6
20	200	120
9	?	54

1 1

]

- **b.** In the problem 2,506 \div 7 , the quotient is between 200 and 300
- **d.** $3 \times 48 = 120 + 24$

[]

e. 35,896 + 31,568 = 67,464

[

f. 81,063 - 14,519 = 66,554

[]

3. Complete the following.

a. The sum of 12,985, 36,524 and 10,246 is

c. 16 is 8 times the number

- d. 40 Thousands =
- Hundreds
- e. 568 ÷ 2 = ____

4. Write each of the following numbers in standard form.

- a. Seven and fifteen hundredths
- b. 50 + 7 + 0.04
- c. 9 Ones, 3 Tenths, 6 Hundredths
- 5. Ahmed's school has 26 classrooms. If each class donates 52 cans of food to charity.

 How many cans will be donated?

Thame 1 Nummer Senso and Quintilities

TIMO

Decimal Place Value and Computation

Count 1/1

() : 07 7 12 1 1, 0 11

Each goal in a football game consists of two upright posts and joined at the top by a horizontal crossban

The distance between the posts is 7.32 m and the distance from the lower edge of the crossbar to the ground is 2.44 m.



Concept ()

Decimals to the Thousandths Place



2.53

Lesson No.	Lesson Name	Learning Objectives
Lessons 1&2	The Journey Begins	 Students will read numbers from the Milliards place to the Hundredths place. Students will identify the value of digits from the Milliards place to the Hundredths place.
	Decimals to the Thousandths Place	Students will read decimal numbers to the Thousandths place. Students will write decimal numbers to the Thousandths place.
Lessons 3&4	Place Value Shuffle	Students will explain how a digit changes value as it moves to the left or right in a decimal or whole number.
	Composing and Decomposing Decimals	Students will compose and decompose decimals in multiple ways.
Lesson 5	Comparing Decimals	Students will compare decimals to the Thousandths place.
Lesson 6	Rounding Decimals	Students will round numbers to the nearest Tenth, Hundredth, or Thousandth.



- The Journey Begins
- · Decimals to the Thousandths Place

Louis 0

The value and the place value of decimals

- A decimal is a number that uses a decimal point as 9.58
- A decimal has one or more digits to the right of a decimal point.

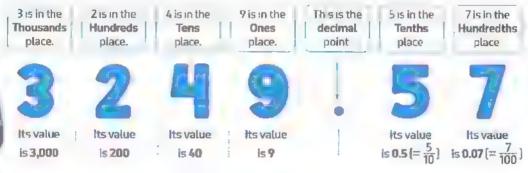


In 2009, Usain Bolt set the world record in the 100-metre sprint at **9.58** seconds. He still known as the fastest man in the world.

 The value of each digit in any number depends on its place in this number

For Example

Notice the value of each digit in the number 3,249.57



You can use the large place=value chart to help you read and write decimals as follows:

	M	illio	L.	Thousands									
0	Н	T	0	Н	T	0	Н	T	0	a .	Tenths	Hundredths	
						3	2	4	9		5	7	

Standard Form: 3,249.57

Word Form: Three thousand, two hundred forty-nine and fifty-seven hundredth.

Unit Form: 3 Thousands, 2 Hundreds, 4 Tens, 9 Ones, 5 Tenths, 7 Hundredths.

Notes for parents:

 Let your child review place value from the Milliards place to the Hundredth place and identify the names and values of digits in the place-value chart



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Example 1

Write each of the following numbers in the place-value chart.

- a. Two hundred forty-three and fifty seven hundredth.
- b. Sixty-seven thousand, three hundred four and eight hundredth.
- E. Four milliard, five hundred thousand and six tenth.

Solution [7]



	Milliards	Millions			Thousands							D	edmale
	0	Н	T	0	Н	T	0	Н	Т	0	,	Tenths	Hundredths
a.								2	4	3		5	7
b.						6	7	3	0	4		0	8
C.	4	0	0	0	5	0	0	0	0	0		6	

Example 2

Write each of the following in word form.

a. 305.18

b. 84.05

c. 3,024.8

d. 12,002,340.14

e. 1,000,000,020.08

f. 700,200,100.4

Solution [7]



- a. Three hundred five and eighteen hundredths
- b. Eighty-four and five hundredths
- c. Three thousand, twenty four and eight tenths
- d. Twelve million, two thousand, three hundred forty and fourteen hundredths
- e. One milliard, twenty and eight hundredths
- f. Seven hundred million, two hundred thousand, one hundred and four tenths

Help your child read numbers from the Milliards place to the Hundredths place.

Example 3

In the number 354.79

- a. What is the value of 7?
- c. What does the digit 4 represent?
- b. What is the value of 5?
- d. What does the digit 3 represent?
- e. What is the value of digit in the Hundredth place?

Solution W



a. 0.7

b. 50

c. 4 ones

d. 3 hundreds

e. 0.09

Example 4

In the following place-value chart, use the digits:

8,4,5,0,2,9,1,8,5,3

Hint

The smallest possible number in this example should be a decimal to the Hundredth place as the given place-value chart.

To create:

- a. the greatest possible number.
- b. the smallest possible number.

Milliards	M	illio	ŢĖ.	110) (i.e.)	(a 1	I)ne:		D)	Elizate .
0	H	T	0	Н	T	0	Н	T	0		Hundredths

Solution [97]



your understanding

Complete:

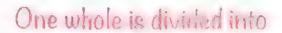
- a. In 932.58, the digit 8 is in the
- place. Its value is
- b. In 791.06, the digit 9 is in the
- place. Its value is
- c. In 302.91, the digit 0 is in the
- place. Its value is

Notes for parents:

· Help your child use place-value chart to create the greatest and the smallest number from given digits.

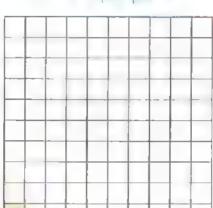
Decimals to the Thousandths place

• You can use the following grid to illustrate the meaning of thousandth.

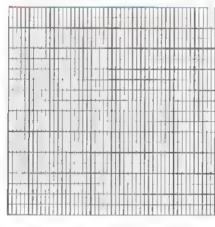




100 equal parts



1000 equal parts



The shaded part – 1 tenth
$$= \frac{1}{10}$$
 (0.1)

The shaded part = 1 hundredth The shaded part =
$$\frac{1}{100}$$
 (0.01)

The shaded part = 1 thousandth
=
$$\frac{1}{1000}$$
 (0.001)

Note that

- Each hundredth could be divided into 10 equal parts, each part represents one thousandth.
- Each tenth could be divided into 100 equal parts, each part represents one thousandth.

How you would read [or write in words] the number 4 053?

- 1. Read the whole number part "Four"
- 2. Read the decimal point as "and"
- 3. Read the entire number that is to the right of the decimal point "fifty-three"
- 4. Read the last digit's place value "thousandths"

So, I read (or write in words) the number as:

"Four and fifty-three thousandths"

and you can write this number in place-value chart as follows:



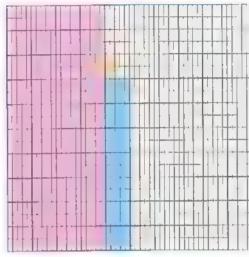
· Help your child read and write decimal numbers to the Thousandths place



100

Examples:

a.



The shaded part = 4 tenths, 7 hundredths, 6 thousandths

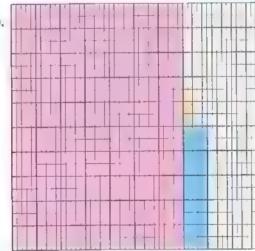
= 47 hundredths, 6 thousandths

= 476 thousandths

$$=0.476\left(\frac{476}{1000}\right)$$

"four hundred seventy-six thousandths"

b.



The shaded part = 7 tenths, 5 hundredths, 4 thousandths

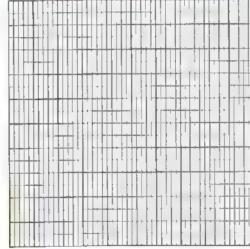
= 75 hundredths, 4 thousandths

= 754 thousandths

$$-0.754 \binom{754}{1000}$$

"seven hundred fifty-four thousandths"

c.



The shaded part = 6 thousandths

$$= 0.006 \left(\frac{6}{1000} \right)$$

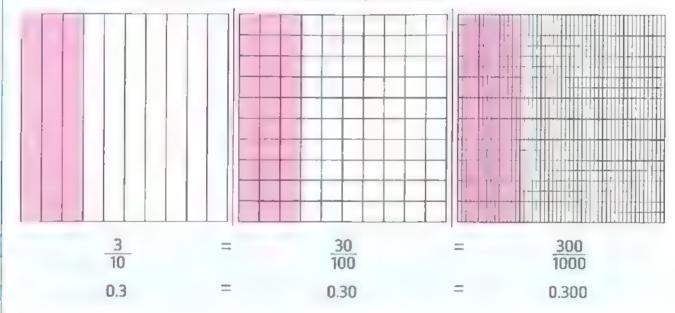
"six thousandths"

Notes for parents:

Ask your child to give you more examples on decimals to the Thousandths place



You can name the same amount in different ways as follows:



We deduce that:

If you put zeroes after the last decimal digit in a number, then the value of this number doesn't change.

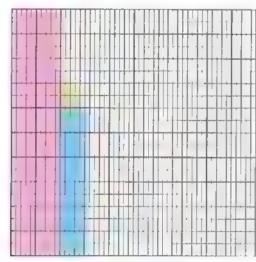


your understanding

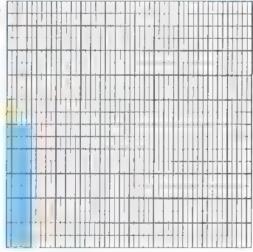
Record what decimal is shown:

a.

ths



b.



· Give your child a decimal like 0.8 and ask him/her to name this decimal in different ways.

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· Danian . the Managellis [has

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VIII.		WILLS.	- 4	-

SSONS 1&Z			
# DEMINDED	do Arrivo Arrivo	C+ 15 200	• problem convinc

From the school book

- 1. Write each of the following numbers in the place-value chart.
 - a. Three hundred fifty-two and seventy-four hundredths.
 - **b.** Six hundred forty-two thousand, five hundred one and fifty-one hundredths.
 - c. Nine thousand, eight hundred eighty and twenty seven thousandths.
 - d. Seven milliard, nine hundred million, two hundred four thousand, sixty and eight tenths.
 - e. Two hundred sixty-five million, nine hundred forty thousand, thirteen and ninty-one hundredths.
 - f. Four million, five thousand and three thousandths.

	Milliards	М	illior	าร	The	ousai	nds		Ones	5	4		Decimal	5
	0	H	T	0	Н	Т	0	Н	Т	0	4	Tenths	Hundredths	Thousandths
a.														
b.														
C.														
d.														
e,														
f.														

2.	Write	each	of	the	following	in	decimal	form.
----	-------	------	----	-----	-----------	----	---------	-------

а.	24	hur	ndr	edi	ths
E-C a		PIMI	1541	~~~	~ = 1 = 2

- c. 8 thousandths
- e. 4 and 4 thousandths
- a. 9 and 700 thousandths
- i. 7 thousand and 48 hundredths
- k. 2 milliard and 3 thousandths

- b. 35 thousandths
- d. 7 and 14 thousandths
- f. 1 and 5 tenths ———
- h. 20 and 40 thousandths
- i. 3 million and 142 thousandths
- l. 4 tenths, 8 thousandths

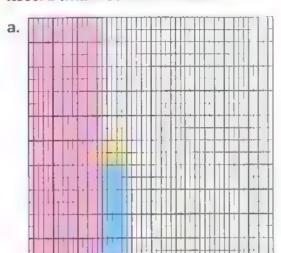
- m. 5 ones, 2 thousandths
- n. 3 million, 2 hundred, 3 hundredths, 5 thousandths
- o. One and one hundred eleven thousandths

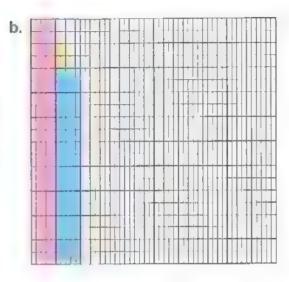
	r.	Two million, thirty two thousand and sixty-one hundredths
	s.	Three milliard, seventeen and forty-eight hundredths
	t.	Five hundred twenty-seven million, seven hundred thousand, five hundred thirty and eighty four hundredths —
3.	W	rite each of the following in word form.
س	a.	504.21
	b.	4.231
	C.	49.08
	d.	0.534
	е,	4,030.7 ————————————————————————————————————
	f.	4.029
	g.	17.107
	h.	1.802
	i.	0.608
	j.	8.002
4.	Co	emplete.
	a.	In 452.19, the digit 9 is in the place. Its value is ———
	b.	In 1,354.982, the digit 2 is in the —— place. Its value is
	c.	In 46.71, the digit 7 is in the place. Its value is
	d.	III In 734.28, the digit 8 is in the place. Its value is ———
	e.	In 452.09, the digit 5 is in the place. Its value is
5.	ln	the number 729.458
	a.	What is the value of 4?
	b.	What is the value of 8?
	C.	What does the digit 2 represent? ——
	d.	What does the digit 9 represent ? ——
	e.	What is the value of the digit in the Hundredth place?

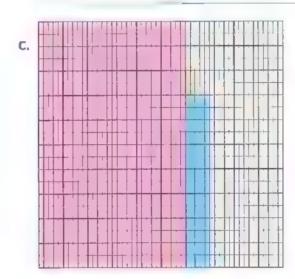
. Two and one hundred nine thousandths

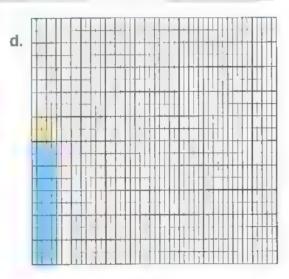
q. Three hundred forty and seventy two thousandths

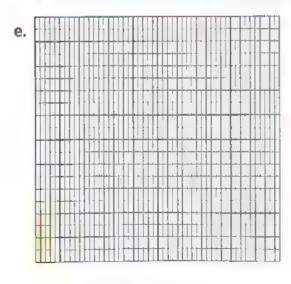
6. Record what decimal is shown.

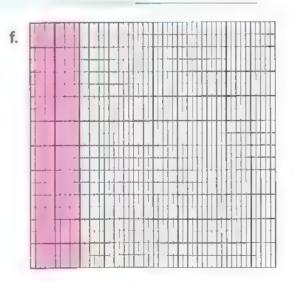




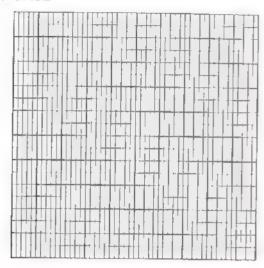




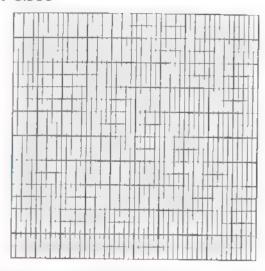




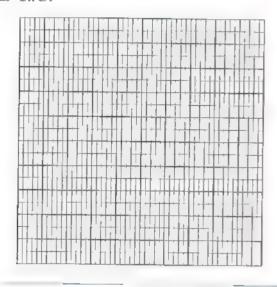
- Shade in the grids to show the decimal stated.
 - a. 0.432



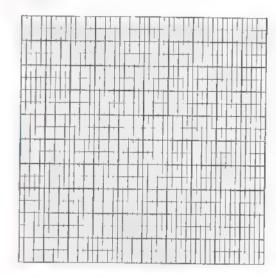
b. 0.506



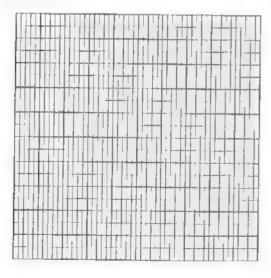
c. 0.729



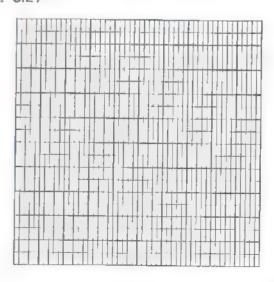
d. 0.004



e. 0.048



f. 0.29



- 8. How many whole numbers, tenths, hundredths and thousandths does the number 0.007 have?
- 9. In the following place-value chart use the digits:

to create.

- a. The greatest possible number.
- b. The smallest possible number.

	Milliards	ı	Million:	S	Th	ousan	ds		Ones		4	D	ecimals
	0	Н	T	0	H	Т	0	Н	Т	0		Tenths	Hundredths
a.													
b.													

10. Join.

a.

b. 0.03

0.300

c. 0.003

d. 300

e. 3

30 tenths

three hundreds

thirty thousandths

three tenths

three thousandths

1.1. The Purple Heron is tall at 70 to 90 centimeters, but it weighs only 0.50 to 1.35 kilograms. Below are the weights of three Purple Herons.

For each number, record the following:

- a. The digit that is in the Tenths place.
- b. The digit that is in the Ones place.
- c. The digit that is in the Hundredths place.

Bird One	0.65 kilogram
Bird Two	1.27 kilograms
Bird Three	0.875 kilogram



12. Math around Egypt Gas Price Decimals

Look at the list of different petrol prices in Egypt.

- a. Which type of petrol is the least expensive?
- b. Which type of petrol is the most expensive?

000000000000000000

Gas Prices per Liter, April 2021

80 Octane petrol: 6.75 L.E.

92 Octane petrol: 8.00 L.E.

95 Octane petrol: 9.00 L.E.

Multiple Choice Questions

Choose the correct answer.

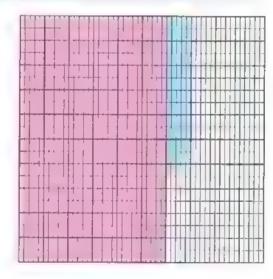
- 1. The number "four and forty-one thousandths" in standard form is -
 - A. 4.41
- B. 4.041
- C. 410.4
- D. 4.401
- 3. The underlined digit in 27.614 is in the — place.
 - A. Tenths
- B. Hundredths
- C. Thousandths
- D. Ones
- 5. In the number 432.519, which digit is in
 - A. 4 B. 3 C. 5

the Hundredths place?

- 2. The value of the digit in the Tenths place in the number 7.024 is
 - A. 0.1
- B. 0
- C. 0.004
- D. 0.02
- 4. Which number of the following has 3 hundredths, 7 ones, 2 thousandths?
 - A. 0.732
- B. 3.72
- C. 7.032
- D. 3.702
- Seventeen thousandths =
 - A. 170
- B. 0.17
- C. 0.017
- **D**. 1.07

- 7. Which of the following is the word form of the number 7,000.005?
 - A. Seven and five thousandths
 - B. Seven thousand and five thousandths
 - C. Seven hundred and five thousandths
 - D. Seven thousand and five hundredths.
- Which of the following doesn't equal four hundred thousandths?
 - A. 0.004
 - B. 0.4
 - C. 0.40
 - D. 0.400

- 9. The shaded part in the opposite figure represents
 - A. 606.2
 - B. 6.62
 - C. 0.662
 - D. 0.266







Composing and Decomposing Decimals

Place value shuffle



If a whole number or a decimal is multiplied by (10) then each digit from this number moves to left one spot on the place-value chart and the value of each digit increases ten times.

For Example:

 714×10

N	fillion	F:	illic	jusai	nds		Ones			ecimais
Н	T	0	Н	T	0	Н	T	0	Tenths	Hundredths
						7	1	- 4	0	0
					7	1	4	0	0	0

Record 714 on the place-value chart.

- Shift each digit to the left one spot to get the number "7,140"
- Then $714 \times 10 = 7,140$
- The value of the whole number "714" increased when multiplying by 10
- The value of the 7 increased when multiplying by 10 from 700 to 7,000
- The value of the 1 increased when multiplying by 10 from 10 to 100
- The value of the 4 increased when multiplying by 10 from 4 to 40

Another Example:

714 × 100

M	illior	15 🖫	The	ousai	nds		Ones			C C	lecimals
Н	T	0	Н	T	0	H	Т	0	•	Tenths	Hundredths
						7	1	4	-	0	0
					7"	- 1	4	0	4	0	0
				7"	1	4	0	0	1	0	0

Note that

If each digit shifts to the left two spots, then the value of each digit increases 100 times, then $714 \times 100 = 71,400$

Notes for parents:

· Let your child explain how a digit changes value as it moves to left in a decimal or whole number.





[10] If a whole number or a decimal is divided by

, then each digit from this number moves to right one spot on the place-value chart and the value of each digit decreases ten times.

For Example: 615 ÷ 10

М	illior	15	The	ousai	nds	Ones			P -		ecimals
H	T	0	H	T	0	Н	Т	0		Tenths	Hundredths
						6-	1-	5			
							6	1		³ 5	

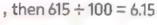
- Record 615 on the place-value chart,
- Shift each digit to the right one spot to get the number 61.5
- Then $615 \div 10 = 61.5$
- The value of the whole number "615" decreased when dividing by 10
- The value of the 6 decreased when dividing by 10 from 600 to 60
- The value of the 1 decreased when dividing by 10 from 10 to 1
- The value of the 5 decreased when dividing by 10 from 5 to 0.5

Another Example: | 615 ÷ 100

M	littior	15		usai	nds		Ones			T.	ecimals
H	T	0	Н	T	0	Τ	Т	0		Tenths	Hundredths
						6	1	5	-: .		
							6	1-	-: \	5	

Note that

If each digit shifts to the right two spots, then the value of each digit decreases 100 times





Dividing any number by 10 is the same as multiplying this number by $\frac{1}{10}$ since, $362 \div 10 = 362 \times \frac{1}{10}$

Let your child explain how a digit changes value as it moves to the right in a decimal or whole number.

Use the place-value charts to solve each problem. Fill in the blanks to show how the value of each digit also changed.

 5.8×10

They condi		ne			1)	चात्रम्
0	Η,	Т	0		Tenths	Hundredths
		-		-		

- The value of the whole number
 - [increased / decreased]
- The value of the 5 [increased / decreased] when multiplying by 10 from to
- The value of the 8 (increased / decreased) when multiplying by 10 from to

942 ÷ 100

housands	Đ,	One			- Manual L		
0	Н	Т	0		Tenths	Hundredths	
				ь			
			-				

- The value of the whole number
 - [increased / decreased]
- The value of the 9 [increased / decreased] when dividing by 100 from
- The value of the 2 (increased / decreased) when dividing by 100 from

to

C.

6.31 × 100

Thousands				97	ROOF
0	Н	T	0	Tenths	Hundredths

- The value of the whole number {increased / decreased}
- The value of the 3 (increased / decreased) when multiplying by 100 from
- The value of the 1 [increased / decreased] when multiplying by 100 from

d.

 $74.8 \div 10$

0	нт	0	Tenths	Hundredths
			1	

- The value of the whole number [increased / decreased]
- The value of the 7 [increased / decreased] when dividing by 10 from
- The value of the 8 (increased / decreased) when dividing by 10 from

Notes for parents:

Let your child discover how the decimal point moves when multiplying and dividing by 10 or 100

Composing and decomposing decimals

- Composing decimals means [put together]
- Decomposing decimals means (broken apart)
- You can decompose 843.572 in different ways using place-value chart:

Fhousands					1) 1011				
0	Н	Т	0	-	Tenths	Hundredths	Thousandths		
	8	4	3		5	7	2		

▶ 1st way [expanded form]:

$$843.572 = 800 + 40 + 3 + 0.5 + 0.07 + 0.002$$

▶ 2nd way:

There are many answers that equal 843.572 when composed.



▶ 3rd way:

Example 1

Record the number 504.82 in the place-value chart and decompose this number in expanded form then decompose it in two other ways.

Thousands		Mar.			Dedimete	
0	Н	Т	0	Tenths	Hundredths	Thousandths

- 1st way [expanded form]: ——
- 2nd way:
- 3rd way: -

Solution [

					STREET, STREET				
0	Н	Т	0		Tenths	Hundredths	Thousandths		
	5	0	4	-	8	2			

- 1st way [expanded form]: 504.82 = 500 + 4 + 0.8 + 0.02
- $^{\circ}$ 2nd way: 504.82 = 500 + 4 + 0.82

 \circ 3rd way: 504.82 = 504 + 0.8 + 0.02

You can choose any other answers.

Let your child begin by reviewing how to write number in expanded form and learn that number can be decomposed in many different ways.

Example 2

Decompose the following numerals using expanded form.

- a. 640.078
- b. twenty-three and forty-two thousandths.

Solution [7



- a. 640.078 = 600 + 40 + 0.07 + 0.008
- **b.** 23.042 = 20 + 3 + 0.04 + 0.002



Example 3

Compose each of the following.

- a. 4.000 + 80 + 7 + 0.1 + 0.002
- b. 420 + 0.2 + 0.07 + 0.009
- c. 5.900 + 0.3 + 0.008 + 70 + 2

Solution [7]



a. 4,087.102

b. 420.279

c. 5,972.308





your understanding

Complete the following.

1. Compose: 452.087

Decompose:

2. Compose: 204.005

Decompose:

3. Compose:

Decompose: 540 + 0.2 + 3 + 0.007 + 0.09

Notes for parents:

Help your child compose and decompose decimals in multiple ways.

ERRIENE

on lessons 3&4

e Place Value singlike

Compound and Decomposing Decimals

■ REMEMBER

From the school book

1. Use the place-value charts to solve each problem. Fill in the blanks to show how the value of each digit also changed.

a. $85 \times 10 = -$

housands Ones	Ones				Decimals	
0	Н	Т	0	Tenths	Hundredths	

by 10

• The value of the whole number [increased/decreased] when multiplying

The value of the

(first digit)

[increased/decreased] when

multiplying by 10 from

to

• The value of the

(second digit)

[increased/decreased] when

multiplying by 10 from

to

b. $57 \div 10 =$

Thousands	Ones		*	Decimals		
0	Н	Т	0	4	Tenths	Hundredths

The value of the whole number

(increased/decreased) when dividing by 10

 The value of the (first digit)

(increased/decreased) when dividing

by 10 from ____

The value of the (second digit)

(increased/decreased) when

dividing by 10 from -

c. 44 6.5 × 10 =

Thousands	Ones				D	ecimals
0	Н	Т	0	,	Tenths	Hundredths
			,			

The value of the whole number

[increased/decreased] when multiplying by 10

The value of the

• The value of the

(first digit)

[increased/decreased] when

- multiplying by 10 from
- -- to (second digit)

(increased/decreased) when

multiplying by 10 from

to

d. $7.3 \times 100 = -$

Thousands	Ones			D	ecimals
0	Н	T	0	 Tenths	Hundredths
		I			

• The value of the whole number [increased/decreased] when multiplying by 100

 The value of the (first digit) multiplying by 100 from

(increased/decreased) when

The value of the

(second digit)

[increased/decreased] when

multiplying by 100 from

e. 📖 345 ÷ 10 =

Thousands		Ones		Decimals		
0	Н	Т	0	Tenths	Hundredths	

The value of the whole number

[increased/decreased] when dividing by 10

 The value of the by 10 from

(first digit)

(increased/decreased) when dividing

• The value of the dividing by 10 from [second digit]

(increased/decreased) when

The value of the

to [third digit]

(increased/decreased) when dividing

by 10 from

to

f. $1.890 \div 100 =$

Thousands		Ones		D	Pecimals
0	H	1 -	0	 Tenths	Hundredths

The value of the whole number

[increased/decreased] when dividing by 100

• The value of the [first digit] [increased/decreased] when dividing

by 100 from to

 The value of the dividing by 100 from

[second digit] [increased/decreased] when

The value of the

to [third digit]

[increased/decreased] when dividing

by 100 from -

Form the place-value chart to solve each problem.

a. 2.5 × 10 =

b. 14.52 × 10 =

c. $75 \times 10 =$

d. $1.452 \times 10 =$

e. $43 \times 100 =$

f. 18.129 × 100 =

g. $4.9 \div 10 =$

h. $218 \div 10 =$

i. $507.6 \div 10 = -$

 $1.458.2 \div 100 =$

7. In the following problem, record the number in the place-value chart and decompose this number in expanded form and then in two other ways.

a. (1) 34.527

Thousands	Ones			,		Decimals	
0	Н	Т	0		Tenths Hundredths		Thousandths

o '	I st way	expanded form]:	
		(onpairaca tortif)	

- 2nd way :-
- 3rd way:

b. 🗐 21.045

Thousands		Ones				Decimals	
0	0 H T 0				Tenths	Hundredths	Thousandths

- 1st way [expanded form]:
- 2nd way:
- 3rd way:

c. 42.007

Thousands Ones				Thousands				Decimals	
0	нт		0	,	Tenths	Hundredths	Thousandths		

- •1st way (expanded form):
- 2nd way:
- 3rd way:

d. 302.504

Thousands	Ones			,		Decimals	
0	H	Т	0		Tenths	Hundredths	Thousandths

- 1st way [expanded form]:
- 2nd way:
- 3rd way:

e. 💷 231.128

Thousands		Ones			Decimals	
0	н т о		Tenths	Hundredths	Thousandths	

- 1st way (expanded form) :
- 2nd way:
- 3rd way:

f. 🗐 508.17

Thousands Ones				¥	Decimals		
0	Н	T	0		Tenths	Hundredths	Thousandths

- 1st way (expanded form) :
- 2nd way : _____
- 3rd way:

4. Write each of the following in standard form.

- a. 7 + 0.3 + 0.04 + 0.009 = -
- 6.400 + 4 + 0.04 + 0.004 =
- **c.** 5,000 + 40 + 9 + 0.2 + 0.007 =
- d. 700 + 0.4 + 0.009 =
- e. 70 + 8 + 0.6 + 0.01 + 0.003 =
- f. 0.2 + 0.009 + 10 + 400 =
- g. 40 + 0.8 + 0.009 + 500 =
- h. 6,000 + 70,000 + 0.2 + 4 + 0.09 + 0.005 =
- i. 70 + 8,000 + 0.009 + 0.1 + 3 =

5. Write the number in expanded form.

- a. Two and forty-one thousandths
- b. Fourteen and three hundred two thousandths
- c. Seventy-nine thousandths ____
- d. 8 tens, 4 ones, 3 tenths, 6 hundredths, 9 thousandths
- e. 4 hundreds, 7 hundredths, 8 thousandths
- f. three million, seventeen and eighty-one thousandths



6. Complete each of the following.

- a. 4.208 =
- +0.2 + 0.008
- **b.** $70.106 = 70 + 0.1 + \cdots$

- c. = 120 + 0.204
- e. 34.012 = 34 +

- d. -=4+0.005+0.3
- = 4 + 30 + 400 + 0.008 + 0.02
- g. Seventy and eight thousandths = +
- h. Sixteen and seven tenths =
- i. 283 thousandths = +0.2 + 0.08
- j. 57 thousandths = 0.007 + -
- k. 15.7 tenths = 1 + + 0.07
- L. 1482 hundredths = 14 +



7. Match the cards that have the same numeral.

- $78.42 \div 10$
- 78.42×10
- 7842 hundredths
- 7842 tens
- 78.42×100

- 700 + 84 + 0.2
- 7,000 + 800 + 40 + 2
- 78,000 + 400 + 20
 - 7 + 0.842
 - 70 + 8 + 0.4 + 0.02





Choose the correct answer.

1. What is the standard form for:

$$60 + 3 + 0.5 + 0.004$$
?

- A. 63.54
- B. 63.054
- C. 63.504
- D. 6.354

- 2. Which expression decomposes the number 72.038 in expanded form?
 - A. 70+2+0.3+0.08
 - **B.** 70 + 2 + 0.03 + 0.008
 - C. 70 + 2 + 0.3 + 0.008
 - **D.** 70 + 2 + 0.03 + 0.08

- 3. 215 hundredths = [in expanded form]
 - A. 200 + 10 + 5
 - B. 20 + 1 + 0.5
 - C. 2 + 0.1 + 0.05
 - D. 200 + 0.1 + 0.05

- 4. The number «eighteen and seventeen thousandths» in expanded form is
 - A. 10 + 8 + 0.1 + 0.007
 - **B.** 10 + 8 + 0.07 + 0.001
 - C. 10+8+0.1+0.07
 - **D.** 10 + 8 + 0.01 + 0.007

- **5.** 701.008 = 700 + 1+
 - A. 0.080
- B. 0.800

C. 8

- D. 0.008
- 6. 72.43 × 10 -
 - A. 7.243
- B. 72.34
- C. 7243
- D. 724.3

- 7. 43.12 ÷ 10 = ----
 - A. 4.312
- B. 431.2
- C. 4312
- D. 43.21
- 8. 174.602 = 174 +
 - A. 6.02
- B. 0.602
- C. 602
- D. 60.2
- 9. Which of the following is NOT equivalent to 42.187?
 - A. 40 + 2 + 0.1 + 0.87
 - **B.** 40 + 2 + 0.1 + 0.08 + 0.007
 - C.42 + 0.187
 - D. 40 + 2 + 0.187



Comparing Decimals



How to compare two decimals

You can use place value charts to compare decimals.

▶ Examples:

Compare 2.948 and 2.957

					Decimal	
Н	T	0	•	Tenths	Hundredths	Thousandths
		2	٠	9	4	8
		2		9	5	7

Begin with the digit in the greatest place value.

Compare ones: 2 ones = 2 ones

Compare tenths: 9 tenths = 9 tenths

• Compare hundredths: 4 hundredths < 5 hundredths

So, 2.948 < 2.957

Compare 0.26 and 0.206

					Decimal	
H	T	0	*	Tenths	Hundredths	Thousandths
		0		2	6	0
		0	7	2	0	6

Begin with the digit in the greatest place value.

• Compare ones: 0 ones = 0 ones

Compare tenths: 2 tenths = 2 tenths

Compare hundredths: 6 hundredths > 0 hundredths

50, 0.26 > 0.206

Example 1

Use place value chart to compare the following decimals:

a. 52,008 and 52.8

h. 3.02 and 3.019

c. 67.5 and 67.500

Notes for parents:

Remind your child to begin comparing with the greatest place value.

Solution [V]



) y	Tar Viv			1 17 × 18-				
H	T	0		Tenths	Hundredths	Thousandths		
	5	2	4	0	0	8		
	5	2	•	8	0	0		

$$5 = 5$$
, $2 = 2$, $0 < 8$

Since, 0 < 8

So, 52.008 < 52.8

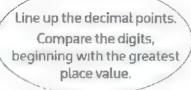
b.		to the state of			Decima	C
	Н	Т	0	Tenths	Hundredths	Thousandths
			3	0	2	0
			3	0	1	9

Since, 2 > 1

So, 3.02 > 3.019



50,67.5 = 67.500





Example 2

Compare 2.135 and 2.137

Solution [9]



To compare 2.135 and 2.137, follow the following steps:

itep 1	Step 2	Step 3	Step 4
Compare the ones,	Compare the tenths,	Compare the hundredths,	Compare the thousandths.
2.135	2. 35	2.1-5	2.135
2.137	2.137	2.137	2.137
the same number of ones	the same number of tenths	the same number of hundredths	5<7

Ask your child how is comparing decimals like comparing whole numbers.

Example 3

Compare using "<, > or =".

- a. 0.395

- b. 28 thousandths
- 0.28

- c. 4 ones , 4 hundredths , 5 thousandths
- 4.054

Solution 🕎



a. Since, $\frac{385}{1000} = 0.385$

So, 0.395 > 0.385

b. Since, 28 thousandths = 0.028

So, 0.028 < 0.28

c. Since, 4 ones, 4 hundredths, 5 thousandths = 4.045 So, 4.045 < 4.054



your understanding

Compare using ">, < or =".

- a. 3.204
- 3.24
- c. 20.7
- 20.077
- e. 9.08
- 9.079
- g. 4.12
- 4 + 0.1 + 0.007

- b. 19.2 19.200
- **d.** 1.01
- 1.099
- f. 14.010
- h. 5 thousandths
- 0.500



Notes for parents:

Ask your child to explain the strategies he/she uses to compare decimals.

Exercise 3

Composing Decimans

on lesson 5

_		-	 г	-		
- 000	ь.	-	10		6-	

PRO	BLE	М	SOLV	ING

From the school book

Rewrite the decimals in the chart. Use the symbols "> , < or = ".

- a. 4.08
- 4.8

	Ones			Decimal	5
Н	Т	0	Tenths	Hundredths	Thousandths

b. 15.3

15.300

Ones			Decimal	S
HT	0	Tenths	Hundredths	Thousandths

c. 230.03

230,009

	Ones			Decimal	5
Н	Т	0	Tenths	Hundredths	Thousandths

2. Compare the decimal numbers using the symbols "> , < or = ".</p>
Draw a place value table to help you, if needed.

- **a.** 0.2
- 0.193
- **b.** 0.013
- 0.031

- c. 0.007
- 0.07
- d. 🗀 45.057
- 45.100

- e. 0.10
- 0.100
- **f.** 1 98.013
- 98.101

- g. 🔝 50.009
- 50.100
- h. 🛍 10.1
- 10.011

- i. 34.56
- 3.456
- j. 0.48
- 0.480

- k. 🕮 2.01
- 2.099
- L <u>M</u> 34.5
- 34.500

- m. 87.3
- 87.03
- n. 2.197
- 2.179

- o. 2.19
- 2.190
- **p.** 3.011
- 3.001

- 3. At the Fayoum Basin, temperatures vary greatly. The numbers are the temperatures recorded on one day in May. All numbers are in degrees Celsius. Compare each set of numbers using the symbols "> , < or = ".
 - a. 29.9° 30.2°
 - c. 40.5° 41.0°
 - e. 38.80° 38.8°

- **b**. 36.5°
- 35.6°
- d. 35.2°
- 34.70

- 4. Compare the numbers using ">, < or =".
 - a. 2.71
- $2\frac{8}{100}$
- **c.** 1.002
- $\frac{1002}{1000}$
- e. 4.000
- $\frac{400}{1000}$
- g. 3 thousandths
- 30 100
- i. 8 tenths
- 0.799
- k. 5.102
- 5+0.1+0.02
- m.8 + 0.009
- 8 + 0.1 + 0.001

- b. 2.007
- \bigcirc
- d. 16.24 16 224
- f. 99.257
- 1234 tenths
- h. eighteen thousandths
 - 0.02

- j. 0.402
- 402 thousandths
- L 4.904
- (
- 4 + 0.9 + 0.004
- n. 407.05
- 400 + 7 + 0.005

- o. 7 ones,5 thousandths
- 7.05
- p. 2 ones,3 tenths,4 thousandths
- 2.34

- q. 8.004
- 4 ones, 8 thousandths
- r. $3\frac{4}{1000}$



3 ones,4 hundredths



- 6. Circle all the decimal numbers that are greater than 4.3
 - 3.4 , 4.03 , 4.34 , 4.300 , 3.99 , 4.7 , 4.003
- 6 Circle all the decimal numbers that are smaller than 2.104

2.102 , 2.401 , 2.14 , 2.199 , 2.11 , 2.7 , 2.014

7. Select the largest number:

1.401 , 1.341 , 1.440 , 1.055 , 1.3 , 1.30 , 1.28 , 1.49

8. 🖾 Select the smallest number :

20.09 , 20.1 , 20.001 , 20.011 , 20.10 , 20.010 , 20.9 , 20.21

- 9. Order from least to greatest.
 - a. 4.136 , 4.157 ,4.150 , 4.015
 - b. 1.662 , 1.616 , 1.661 , 1.166
 - c. 2.866 , 2.668 ,2.692 , 2.868
 - d. 45.072 , 45.008 , 45.702 , 45.729 , 4.572
 - e. 80.21 , 80.012 , 8.102 , 8.012 , 80.09
- Youssef ran 2.2 kilometers during track practice and
 Nader ran 2.099 kilometers.

Who ran the greater distance?



- Give an example of two decimal numbers where the number with more decimal digits is smaller than the other number.
- Give an example of two decimal numbers where the number with more decimal digits is equal to the other number.

Choose the correct answer.

- 1. 3.24
- 3.239

B. <

A. > C. =

A. >

C. =

- Which of the following is greater than 1.72?
 - A. 1.27
- B. 1.07
- C. 1.8

D. 1.072

- 3. 19 hundredths
- 19 thousandths
- B. <

- Which of the following is true?
 - **A.** 0.532 > 0.537
- B. 0.1+3<1.3
- C. 1.019 > 1.1
- **D.** $\frac{18}{10} = 1.8$

- **5.** 4 + 0.2 + 0.05 + 0.007 4257 hundredths
 - A. >

B. <

C. =

6. 3.408

A. >

C. -

- 100
 - B. <
- 7. 14.1 7 > 14.158

 - **A.** 3
 - **C.** 5

- B. 4
- D. 6

8. 5 ones, 5 thousandths



5.05

A. >

B. <

- C. =
- 9. Which of the following is NOT true?
 - A. 14.14 > 14.014
 - **B.** $\frac{143}{100} = 1.43$
 - C. 2.051 > 2.501
 - D. 2.005 < 5.002

- - A. 0.300
- B. 0.3
- C. 0.003
- D. 0.30



Rounding Decimals

Learn

Different strategies to round decimals

You can round decimal numbers using one of the following strategies:

- Midpoint strategy.
- Rounding rule strategy.



Table tennis is one of the world's most popular games, it became an Olympic sport in 1988. A table tennis ball weighs between 2.4 grams and 2.53 grams = 2.5 grams



Midpoint strategy

To round decimals using midpoint strategy, do as follows:

- 1. Draw a vertical number line.
- 2. Put the two numbers that the given number lies between them.
- 3. Put their midpoint.
- 4. If the given number is at or above the midpoint, round up and if the given number is below the midpoint, round down.



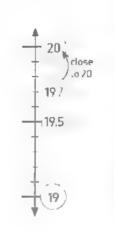
Use midpoint strategy to round each of the following,

- a. 19.7 (to the nearest whole number).
- b. 4.62 (to the nearest Tenth).
- c. 8.765 (to the nearest Hundredth).

Solution V



- a. 19.7 is between 19 and 20
 - 19.5 is the midpoint between the two numbers 19 and 20
 - 19.7 is closer to 20 because 0.7 is above the midpoint ,then 19.7≈20

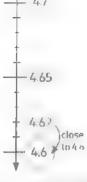


Notes for parents:

· Remind your child with midpoint and rounding rule strategies he/she learned in Primary 4.



- 4.65 is the midpoint
 between the two numbers 4.6 and 4.7
- 4.62 is closer to 4.6 because 0.02 is below the midpoint ,then 4.62≈4.6



c. • 8.765 is between 8.76 and 8.77

- 8.765 is the midpoint between the two numbers 8.76 and 8.77
- 8.765 is closer to 8.77 because 0.005 is at the midpoint ,then 8.765≈8.77



To round decimals using rounding rule strategy, do as follows:

1. Underline the digit in the place you want to round the decimal number to it.

2. Look at the digit to its right and circle it.



This circled digit is

Less than 5

Leave out the circled digit and the other digits to the right.



Increase the underlined digit by one, and leave out the other digits to the right.



Example 2

Use rounding rule strategy to round the decimal number 18.5376 to the nearest whole number, Tenth, Hundredth and Thousandth.

Solution



• 1<u>8</u>.5876 ≈ 19

[to the nearest whole number]

• 18.5376 ≈ 18.5

[to the nearest Tenth]

• 18.5378 ≈ 18.54 • 6 > 5

(to the nearest Hundredth)

• 18.5376 = 18.538 (to the nearest Thousandth)



Remarks

- Rounding to the nearest Tenth, the result should include at most 1 decimal digit
- Rounding to the nearest Hundredth, the result should include at most 2 decimal digits and so on.

Notes for parents:

 Remind your child to round up if the digit to the right of the place value he/she wants to round is equal to or greater than 5

Example 3

Round each number to the place of the underlined digit:

a. 28.12

e. 47.051

i. 0.705

b. 6.247

f. 5.9184

j. 36.997

c. 12.5928

g. 0.6697

k. 25.796

d. 0.7

h. 402.601

L 0.995

Solution 🔯

a.
$$28.12 \approx 28$$

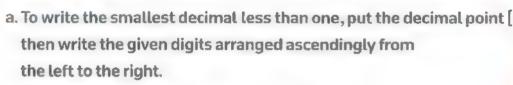
g.
$$0.6697 \approx 0.670$$

k.
$$25.796 \approx 25.80$$

Example 4

- a. Write down the smallest decimal, less than one, that includes only the digits 3,6,4 and 2, then round that number to the nearest Hundredth and to the nearest Thousandth.
- b. Write down the greatest decimal, less than one, that includes 4 digits which are 5, 9, 2 and 7, then round that number to the nearest Hundredth and to the nearest Thousandth.

Solution [V





• 0.2346 ≈ 0.23

(to the nearest Hundredth)

0.2346 ≈ 0.235

(to the nearest Thousandth)



Remind your child how he/she write the smallest and the greatest decimal formed from given digits.

b. To write the greatest decimal, less than one, put the decimal point [0.], then write the given digits arranged descendingly from the left to the right.

• The greatest decimal less than one = 0.9752

0.9752 ≈ 0.98

(to the nearest Hundredth)

0.9752 ≈ 0.975

[to the nearest Thousandth]



your understanding

Round each number to the place of the underlined digit.



Notes for parents:

Let your child round the decimal 6.78 to the nearest Tenth using two different strategies

Exercise on lesson 6

Rounding Docimes

REMEMBER





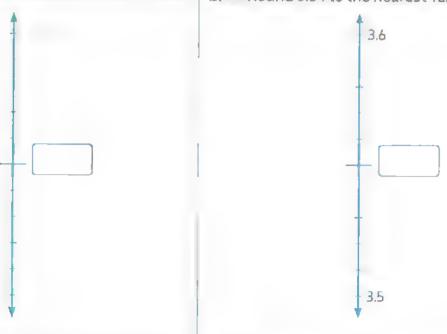


From the school book

Label the midpoint of the number line. Place the given decimal number at its proper location.

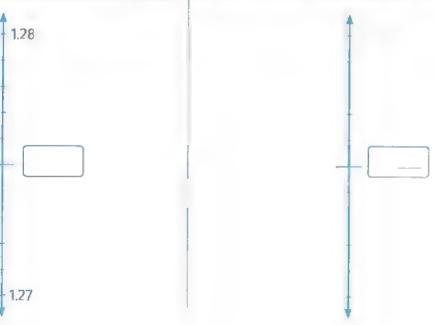






c. Round 1.277 to the nearest Hundredth.





2. Round each of the following numbers to the nearest whole number.

3. Round each of the following numbers to the nearest Tenth.

i. 502
$$\frac{37}{100}$$
 ≈ -----

4. Round each of the following numbers to the nearest Hundredth.

f.
$$3\frac{8}{1000} \approx$$

5. Round each of the following numbers to the nearest Thousandth.

6. Round each of the following to the place of the underlined digit.

Complete the following table as you round each decimal to the stated place value.

	Number	Round to the nearest								
+		Whole number	Tenth	Hundredth	Thousnoth					
a.	123.3569	123	123.4	123.36	123.357					
b.	528.2025				-					
c.	43.5426			_						
d.	21.84792									
e.	0.5297									
f.	0.0546	-								
g.	4.2688									

- 8 Mazen is planning a trip from Cairo to the waterfall region in Wadi El Rayan. He will travel 147.72 kilometers. Round the distance to the nearest Tenth.
- 9. Mazen stops to have a snack and stretch after driving 73.255 kilometers. Round the distance to the nearest Hundredth.
- A farmer is building a new fence for her sheep field.

 She wants to build a fence around the whole field.

 Round each dimension to the nearest Tenth.

 89.

125,45 m 89,52 m

Cit

- 11. Write the greatest decimal less than one which consists of 6, 4, 3 and 5, then round it to the nearest Tenth and Hundredth.
- 12. Write the smallest decimal less than one which consists of 2,5,0 and 7, then round it to the nearest Hundredth and Thousandth.
- Name two decimals with digits in the Thousandths place that should be rounded to the Tenth place as 0.3
- 14. Write three decimals, if we round each of them to the nearest Hundredth becomes 12.25
- 15. Write three decimals, if we round each of them to the nearest Thousandth becomes 86.398
- 16. Discover directly the error in each rounded result to the nearest Hundredth, give reason.
 - a, 73.625 ≈ 73.62

- **b.** $200.081 \approx 200.07$
- 17. Read the passage, and then answer the question.
 - There are several cascades along the stream between the two lakes in Wadi El Rayan.

 The distance between the falls is approximately 30 to 35 meters, and the width of the island dividing the cascades is between 20 and 50 meters.

A geologist measured the exact distance between two of the falls at 31.45 meters and between two others at 36.921 meters. If both distances were rounded to the nearest whole number, would they fall into the range given in the passage? Explain your thinking.



- 18. Complete with suitable digits:
 - a. 2.7 8 ≈ 2.79 (to the nearest Hundredth)
 - b. 20.12 $6 \approx 20.123$ (to the nearest Thousandth)
 - c. 9.2 $6 \approx 9.237$ (to the nearest Thousandth)
 - **d.** 19. $5 \approx 20.00$ (to the nearest Hundredth)

Choose the correct answer.

- 1. Round 8.099 to the place of the underlined Round 2.5698 to the nearest Thousandth. digit.
 - A. 7.00

B. 8.08

C. 8.090

- D. 8.1
- - A. 2.569

B. 2.560

C. 2.57

D. 2.568

- 3. 42.81≈
 - [to the nearest whole number]
 - A. 42.8

B. 43

C. 42

- D. 44
- 4. 160.754 ≈
 - (to the nearest Tenth)
 - A. 160.7

B. 160.8

C. 161.0

D. 160.75

- Which number could be rounded to 0.58?
 - A. 0.589

B. 0.57

C. 0.59

- D. 0.577
- 49.386 ≈ 49.4 [to the nearest
 - A. whole number
- B. Tenth
- C. Hundredth
- D. Thousandth

- 7. 39.999 ≈ (to the nearest Hundredth)
 - A. 39

B. 40

C. 39.9

- D. 39.99
- **8.** 82.497 ≈ 82.50
 - fto the nearest

A. whole number

- B. Tenth
- C. Hundredth
- D. Thousandth

- - (to the nearest Hundredth)
 - A. 2

B. 2.1

C. 2.01

- **D.** 2.007
- **10.** 3.8 9≈3.85
 - (to the nearest Hundredth)
 - A. 3

B. 4

C. 5

D. 6

- 11. 999.9 =-
 - [to the nearest whole number]
 - A. 990

- B. 999
- C. 1,000
- **D.** 900
- **12.** 17.947 ≈
 - (to the nearest 2 decimal places)
 - A. 17.948
- **B.** 17.95

C. 17.90

D. 17.94

Concept

2

Adding and Subtracting Decimals



Lesson No.	Lesson Name	Learning Objectives			
Lessons 7 to 9	Estimating Decimal Sums	Students will estimate sums of decimal numbers.			
	Modeling Decimal Addition	Students will model decimal addition.			
	Thinking Like a Mathematician	Students will apply strategies to add decimals to the Thousandths place Students will check the reasonableness of their answers.			
Lessons	Subtracting Decimals	Students will model decimal subtraction.			
10 to 12	Estimating Decimal Differences	Students will estimate differences of decimal numbers.			
	Subtracting to the Thousandths Place	 Students will apply strategies to subtract decimals to the Thousandths place. Students will check the reasonableness of their answers. 			
Lesson 13	Decimal Story Problems	Students will add and subtract decimal numbers to the Thousandths place to solve story problems.			



- · Edhradow Loans
- Modeling Decimal Addition
- Thinking Like a Hathematician

Estimating decimal sums

Sameh measured the tall of his son. He found that his son is 1.15 meter tall. Sameh said that his son is about 1 meter tall.

- Estimation is a way to get a number that is close to the actual answer but not exact.
- In this lesson you will learn many ways to estimate decimal sums.



Front-end estimation strategy

- Write the first digit of the number from the left as it is.
- Change the rest of digits into zeroes.

For Example:

- 12.18 is closer to 10.00 = 10
- 417.59 is closer to 400.00 = 400

Example 1

Estimate each of the following sums by using front-end estimation.

a. 3.41 + 5.22

b. 41.925 + 52.236

Solution [V]



a. 3.41 + 5.22

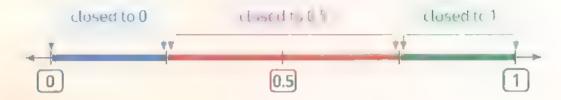
- Estimate: 3+5=8
- b. 41.925 + 52.236
- Estimate: 40 + 50 = 90

Notes for parents:

Remind your child that he/she just look at the first digit of number from the left side, or the highest place value when estimating using front-end strategy.

Benchmark decimals strategy

- The benchmark numbers are 0, $\frac{1}{2}$, 1
- The benchmark decimal for one-half is 0.5 = 0.50 = 0.500



For Example.

- Each of: 0.1, 0.01, 0.001 is closer to 0
- Each of: 0.9, 0.99, 0.999 is closer to 1
- Each of: 0.52, 0.46, 0.611, 0.395 is closer to 0.5

Example 2

Estimate each of the following sums by using benchmark decimals.

- a. 0.41 + 0.58
- c. 12.492 + 13.659

- **b.** 0.6 + 0.391
- **d.** 14.999 + 3.01

Solution [8]

a. 0.41 + 0.58

Estimate: 0.5 + 0.5 = 1

b. 0.6 ± 0.391

Estimate: $0.5 \pm 0.5 = 1$

c. 12.492 + 13.659 = 12 + 0.492 + 13 + 0.659

Estimate .12 + 0.5 + 13 + 0.5 = 26

d. 14.999 + 3.01 = 14 + 0.999 + 3 + 0.01

Estimate $\cdot 14 + 1 + 3 + 0 = 18$

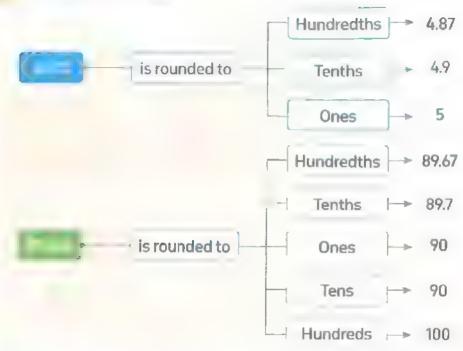


You can separate wholes and parts before using benchmark decimals.

Notes for parents:

 Remind your child that benchmark decimals are common decimals that ne/she can use to judge and compare other decimals.

Rounding strategy





Example 3

Estimate the sum 45.561 + 14.047 by using rounding.

Solution [7]



-45.561 + 14.047

Estimate: 50 + 10 = 60 (to the nearest Tens)

.45.561 + 14.047

Estimate: 46 + 14 = 60 (to the nearest Ones)

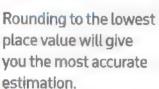
· 45.561 + 14.047

Estimate: 45.6 + 14.0 = 59.6 (to the nearest Tenths)

 \bullet 45.561 + 14.047

Estimate: 45.56 + 14.05 = 59.61 (to the nearest Hundredths)

Note that





Estimate each of the following sums by using more than one strategy.

a. 4.39 + 7.12

62.815 + 37.109

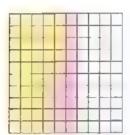
c. 15.98 + 24.021

· Remind your child to round up if the digit to the right of the place value he/sne wants to round is equal to or greater than 5, and round down if it is less than 5.

Modeling decimal addition

To evaluate: 0.45 + 0.15

• Use two different colors to create a model of expression: 0.45 + 0.15



45 Hundredths + 15 Hundredths = 60 Hundredths So, 0.45 + 0.15 = 0.60

Use the place-value chart.

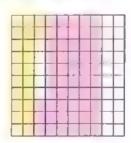
Н	T	0	,	Tenths	Hundredths
		0	٠	4	5
		٥		1	5

To add decimal numbers

- Put the decimal points under each other.
- Put zeroes to the right of the last decimal digit, so that each number has the same number of digits after the decimal point.
- Add by starting from the right to the left.

To evaluate: 0.22 + 0.53

• Use the model.

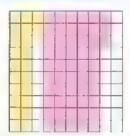


22 Hundredths + 53 Hundredths = 75 Hundredths 50,0.22 + 0.53 = 0.75

Use the place value chart.

Н	T	0		Tenths	Hundredths
		0		2	2
		0	,	5	3

Another way of modeling decimal addition:

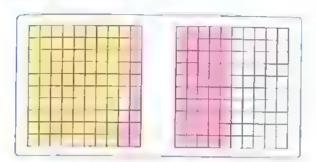


Notes for parents:

Make sure that when your child add decimals, he/she put the decimal points under each other.

To evaluate: 0.86 + 0.62

• Use the model.



86 Hundredths

+62 Hundredths

= 148 Hundredths

50,0.86 + 0.62 = 1.48

• Use the place-value chart.

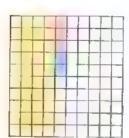
					-
Н	T	0	·	Tenths	Hundredths
		0	4	8	6
		0	*	6	2





To evaluate: 0.4 + 0.03 + 0.02

. Use the model.



4 Tenths + 3 Hundredths + 2 Hundredths

= 40 Hundredths + 3 Hundredths + 2 Hundredths

= 45 Hundredths

So, 0.4 + 0.03 + 0.02 = 0.45

Use the place-value chart.

H	T	0	. '	Tenths	Hundredths
		0		4	0
		0		0	3
		0		0	2



[·] Remind your child that there are more than one model for any addition statement

To evaluate: 2,923.42 + 4,581.3

It is impossible to use the model

So, use the place-value chart.

Thousands)ne	5			
0	Н	Т	0		Tenths	Hundredths
2	9	2	3		4	2
4	5	8	1	٠	3	0



Example 4

Add each of the following.

a.
$$3.13 + 5.49$$

c.
$$14.72 + 7.5 + 0.231$$

Solution [V]



Note

You can add decimals horizontally as follows:



your understanding

Add the following.

a.
$$0.21 + 0.575$$

Notes for parents:

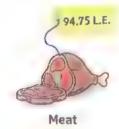
· Let your child learn that the modeling decimal adding strategy is impossible to use when add large numbers.

Thinking like a mathematician

Mathematician use a variety of estimation strategies and also think about the place value of the addends to check the reasonableness of their answers.

Example 5

Bassem bought some stuff from a shopping centre.



56.25 L.E. Chicken





- Round the price of each item to the nearest L.E. and then estimate the value of the total which must be paid.
- . Compare your estimation and the total given in the receipt.
- · What can you say?

Solution [V



- The estimation of the total which must be paid = 95 + 56 + 23 + 150 = 100 + 100
- The total of the receipt = $94.75 + 56.25 + 22.5 + 150.25 = 32 \times 45 + 150$ If we compare the estimated total and the total of the receipt, we find that they are very closed (almost the same) [323,75 = 324]

Example 6

Complete.

a. 15 Thousandths + 14 Thousandths = Thousandths.

Place value: Tenths, Hundredths,

Thousandths.

b. 4 Tenths + 41 Hundredths + 12 Thousandths =

Thousandths.

Place value: — Tenths, — Hundredths, — Thousandths.

Help your child check the reasonableness of his/her answer.

Solution [V]



a. 15 Thousandths + 14 Thousandths = 29 Thousandths $-\frac{29}{1.000}$ = 0.029

Place value: 0 Tenths, 2 Hundredths, 9 Thousandths.

- b. 4 Tenths + 41 Hundredths + 12 Thousandths
 - = 400 Thousandths + 410 Thousandths + 12 Thousandths
 - $= 822 \text{ Thousandths} = \frac{822}{1,000} = 0.822$

Place value: 8 Tenths, 2 Hundredths, 2 Thousandths.

your understanding

Given that L = 32.35 and M = 53.82, estimate the sum of L + M, then compare your estimation with their actual sum.



Notes for parents :

· Let your child connect what his/her learned from the previous lessons by using estimation as a way to determine if a sum is reasonable.

Exercise

on lessons 7 to 9

· Estimating Decimal Sums

Modeling Decimal Addition

Thinking Like a Mathematician

REMEMBER

PROBLEM SOLVING

From the school book

1. Estimate each of the following sums.

a.
$$0.52 \pm 0.49$$

Estimate

Estimate

c.
$$7.99 + 4.011$$

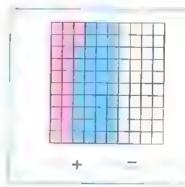
Estimate

Estimate

Estimate

Estimate -

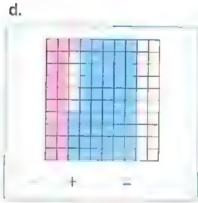
2. Write an expression to match each of the following models, then use each model to evaluate the expression.



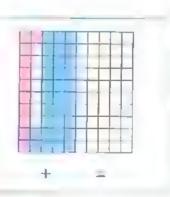
b. 🕮



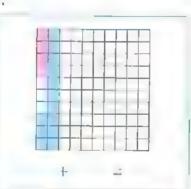




e.



f.



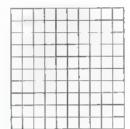
- 3. Complete each of the following.
 - a. . Estimate 0.13 + 0.23
 - Use two different colors to create a model of the expression 0.13 + 0.23



• Record 0.13 and 0.23 in the place-value chart.

Hundredths
_

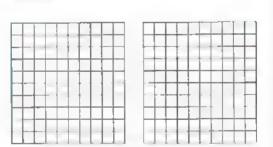
- Evaluate : 0.13 + 0.23 =
- b. Estimate 0.05 + 0.05
 - Use two different colors to create a model of the expression 0.05 ± 0.05



• Record 0.05 and 0.05 in the place-value chart.

Thousands		Ones		D	ecimals
0	Н	T	0	Tenths	Hundredths
		, .			

- Evaluate: 0.05 + 0.05 =
- c. 44 Estimate 0.45 + 0.84
 - Use two different colors to create a model of the expression 0.45 + 0.84



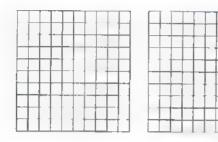
. Record 0.45 and 0.84 in the place-value chart.

Thousands	Ones		Decimals	
0	HIT	0	Tenths	Hundredths
	-			

■ Evaluate : 0.45 + 0.84 =

- d. . Estimate 0.92 + 0.89
 - Use two different colors to create
 a model of the expression 0.92 + 0.89
 - Record 0.92 and 0.89 in the place value chart.

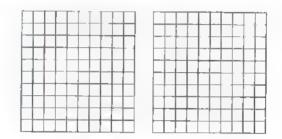
Thousands	Ones		D	ecimals	
0	Н	Т	0	Tenths	Hundredths



Evaluate: 0.92 + 0.89 =

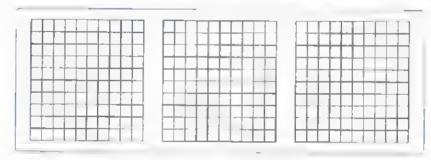
- e. . Estimate 0.97 + 0.42 -
 - Use two different colors to create a model of the expression 0.97 + 0.42
 - Record 0.97 and 0.42 in the place value chart.

	Thousands	Ones		Decimals		
-	0	Н	Т	0	Tenths	Hundredths
-						



• Evaluate : 0.97 + 0.42 =

- f. Estimate 1.9 + 0.62
 - \bullet Use two different colors to create a model of the expression 1.9 \pm 0.62



• Record 1.9 and 0.62 in the place value chart.

I			
T	0	Tenths	Hundredths
			T O . Terrors

• Evaluate: 1.9 + 0.62 =

4. Find the result of each of the following.

5. Find the result of each of the following.

a.
$$14.63 + 34.25 =$$

c.
$$2.65 + 9.3 =$$

e.
$$1.007 + 9 =$$

d.
$$0.875 + 0.43 =$$

f.
$$13 + 2.75 =$$

6. Find the result of each of the following.

a.
$$37.42 + 43.01 + 19.15 =$$

c.
$$6 + 3.65 + 4.912 = ----$$

e.
$$900.333 + 690.222 + 9.445 =$$

f.
$$12.7 + 10.007 + 3.07 =$$

7. Complete the missing digits.

8. Evaluate each sum. Identify each digit's place value.

	b. 🗐 7 Thousandths	+4Thousandths=	Thousand	th[s]
	Place value:	Hundredth(s)—	Thousandth	[s]
	c. 16 Thousandths +	Thousandths = -	Thousandth[s]
	Place value:	— Hundredth[s]	Thousandth([s]
	d39 Thousandths	+ 5 Thousandths =	Thousand	dth(s)
	Place value:	Hundredth(s)	— Thousandth(s)
	e. 4.13 Hundredths +	85 Thousandths =	Thousandt	th[s]
	Place value:	Tenth(s)	Hundredth(s)	Thousandth(s)
	f. 7 Hundredths + 62	Thousandths =	Thousandth[s]	
	Place value:	Tenth(s)	Hundredth(s)	Thousandth(s)
	g. 2 Tenths + 24 Hund	redth + 17 Thousand	ths – Tho	usandth[s]
	Place value :	- Tenth[s]	Hundredth(s)	Thousandth[s]
9.	If a farmer can lift 9 can he lift in 4 minutes		a minute in his shad	oof, about how many liters
10.				hursday she had ridden to see if she has met her
11.	Li Taha has 54.20 L.E. h purchase a box of apple Estimate:————			· ·





Choose the correct answer.

A. 7.14

B. 8.4

C. 7.77

D. 7.014

2. 0.04 + 0.4 =

A. 0.44

B. 0.08

C. 0.008

D. 0.8

A. <

B. =

C. >

4. 2+0.05

1.7 + 0.7

A. <

B. =

C. >

A. 8,029.55

B. 8,029.5

C. 8,030

D. 8,029.1

6. 1.013 + 15.998 =

A. 16.9993

B. 16.9

C. 17.11

D. 17.011

tenths.

A. 88

B. 80

C. 800

D. 8

8. 4 hundredths + 35 thousandths

= thousandths

A. 0.39

B. 0.039

C. 0.07

D. 0.075

Which of the following expressions represents

the opposite model?



B. 0.23 + 0.15

C. 2.03 + 1.05

D. 2.3 + 1.5



, then the missing digit =

A. 1

B. 2

C. 3

D. 4

11. The estimation of 49.872 + 50.011

Is

A. 99

B. 100

C. 101

D. 102

A. 1.53

= 15.89

C. 1.62

B. 1.6

D. 1.65

Liminaria 10 10 12

- · Dubling by building
- · Edorating Designal Differences
- Subtracting to the Thousandths Flux e



Learning 1 Estimating decimal differences

You can use the strategies of estimation that you studied in the previous lesson to estimate decimal differences as the following example.



Example 1

Estimate each of the following.





estimate:
$$40 - 20 = 20$$

estimate:
$$0.9 - 0.7 = 0.2$$

(if you round to the nearest tenth)

$$0.88 - 0.72$$

estimate:
$$1-1=0$$

[if you round to the nearest one]



your understanding

Estimate each of the following.

Notes for parents :

Remind your child that estimation is a way to get a number that is close to another number but not exact.

Subtracting decimals

To evaluate: 0.52 - 0.14

- 1. Shade a model to represent the minuend (0.52).
- 2. Add X's to represent the subtrahend (0.14).
- 3. Count the shaded squares without (X) which is the difference.
- Use the model.

X	Х				
Х	Χ				
Х	X				
X	X			_	
X					
X					
X					
X					
X					
X					

5	2 Hundredths - 14 Hundredths = 38 Hundredths
S	60,0.52-0.14=0.38

To subtract decimal numbers

- Put the decimal points under each other.
- 2 Put zeroes to the right of the last decimal digit, so that each number has the same number of digits after the decimal point.
- Subtract by starting from the right to the left.

Use the place-value chart.

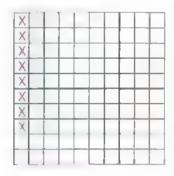
Ones				Decimati			
Н	Т	0	,	Tenths	Hundredths		
		0		5	2		
		0		1	4		

 You can subtract the previous numbers horizontally as follows:

$$0.82 - 0.14 = 0.38$$

To evaluate: 0.3 - 0.08

Use the model.



30 Hundredths
$$=$$
 8 Hundredths $=$ 22 Hundredths So, $0.30 - 0.08 = 0.22$

· Use the place-value chart.

Н	T	0		Tenths	Hundredths		
		0		3	0		
		0	a	0	8		

Note that

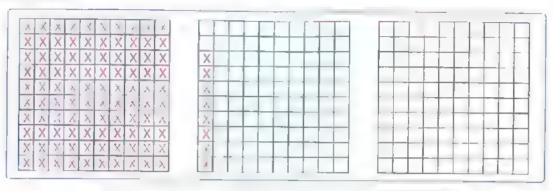
Adding zeroes to the right of the last decimal digit does not change its value.

Notes for parents:

Remind your child to put the decimal points under each other when subtracting decimals.

To evaluate: 2.1 - 1.08

• Use the model.



210 Hundredths = 108 Hundredths = 102 Hundredths **50**, 2.1 = 1.08 = 1.02

Use the place-value chart.

	ما الدي				
H	Т	0		Tenths	Hundredths
		2	٠	1	0
		1	*	0	8



To evaluate: 3,204.4 - 1,823.015

• It is impossible to use the model. So, use the place-value chart.

			W.					
0	Н	T	0	٠	Tenths	Hundredths	Thousandths	
3	2	0	4		4	0	0	
1	8	2	3		0	1	5	

Example 2

Subtract each of the following.

Solution [7

 $^{^{\}circ}$ Ask your child why it is impossible to use model when subtracting 3 204 4 - 1 823 015



your understanding

Subtract each of the following.

- a. 2.325 0.214
- **b**. 12.78 3.5
- c. 97 Thousandths 49 Thousandths.
- d. 7 Hundredths 32 Thousandths.



Notes for parents:

· Remind your child that adding zeroes to the right of the last decimal digit does not change its value

Exercise

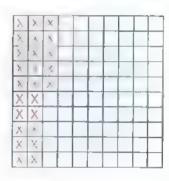
on lessons 10 to 12

- · Sunityon Decimaly
- · Estamaling Decimal Officerates
 - · Suides in gastin Theurereins Phas
- REMEMBER

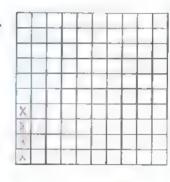
- O C. PROBLEM SOLVING
- From the school book

- 1. Estimate each of the following.
 - a. 2.62 1.59 estimate
 - c. 1335.9 10.8 estimate
 - e. 0.951 0.729 estimate

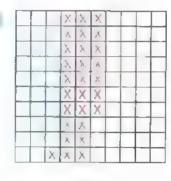
- b. (2.419 1.240 estimate)
- d. 214.024 113.78 estimate
- 2 Write an expression to match each of the following models, then use each model to evaluate the expression.

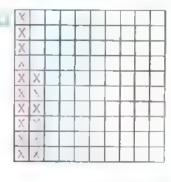


b.

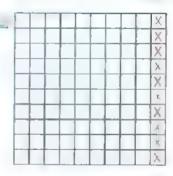


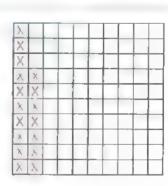
C. .



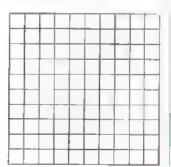


e. ___

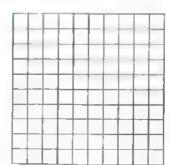


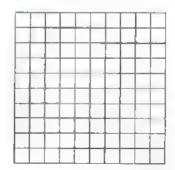


- 3 Create a model to match each of the following expressions and evaluate each of them.
 - a. 0.67 0.49 =

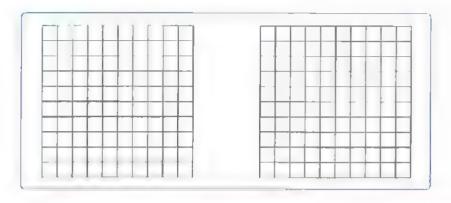


| **b.**
$$\square$$
 0.1 $-$ 0.09 $=$

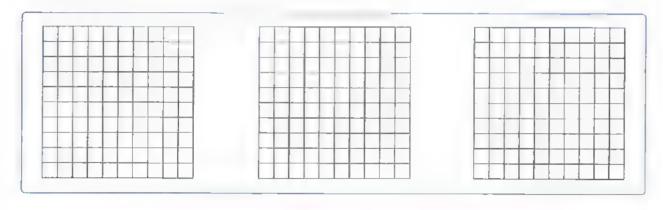




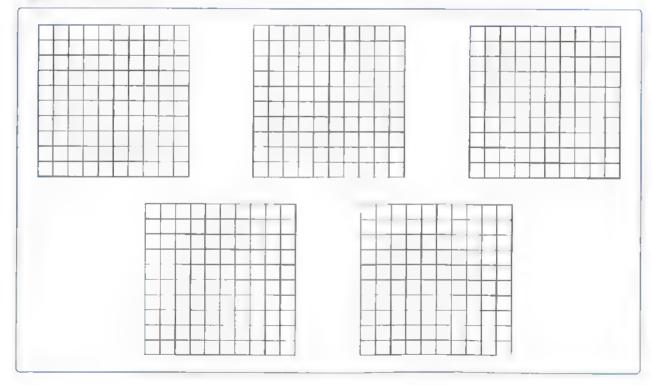
d. . . 1.23 - 1.02 -



e. 2.34 - 1.19 =



f. ... 4.14 = 3.09 =



4. Complete the table.

The expression	Estimating difference	Actual difference
a. 3.94 – 1.23 =	-	
b. (29.98 – 11.99 =		
c. 🛄 0.97 – 0.82 =		
d. (2) 5.05 – 4.15 =		
e. 📖 4.45 – 4.32 =		

5. Find the result of each of the following.

a.		0.	7	8	1
	_	0.	5	3	1

6. Find the result of each of the following.

g.
$$5.27 + 8.39 - 3\frac{14}{100} =$$

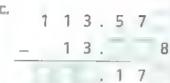
h.
$$512 + 88.35 - 67.035 =$$

7. Complete.

f.
$$-3\frac{3}{5} = 7.634$$

8. Find the missing digits.





Put the suitable relation (< , = or >).

a.
$$7.9 \pm 2.3$$

$$11.7 - 1.3$$

$$6.78 - 0.42$$

$$1 + 0.973$$

$$8 - 3.228$$

$$g. 6.18 + 3.82$$

h.
$$0.2 - 0.05$$

10. Evaluate each difference. Then identify each digit's place value.

a. 98 Thousandths – 5 Thousandths – Thousandths

Place value: Hundredths and

Thousandths

b. 12 Thousandths - 12 Thousandths =

Place value: —— Hundredths and

- Thousandths

Thousandths

c. 32 Thousandths - 15 Thousandths =

Place value: — Hundredths and

Thousandths Thousandths

d. 5 Hundredths - 24 Thousandths =

Thousandths

Place value: Hundredths and —

—Thousandths

Thousandths

e. 7 Hundredths – 17 Thousandths = Thousandths

Place value: — Hundredths and

f. 8 Tenths = 42 Thousandths = — Thousandths

Place value: Tenths, — Hundredths and — - Thousandths



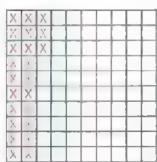
Multiple Choice Questions

Choose the correct answer.

9. Which of the following expressions

represents the model?

B.
$$0.4 - 0.23$$



$$= 8.254$$

ALC: UNKNOWN

Decimal Story Problems

How to solve story problems?



1. Read carefully and determine what is being asked.



2. Plan and write an equation or expression to solve the story problem.



3. Solve the problem and be sure to include units in your answer.



4. Check the reasonableness of your answers.





🛍 Pan



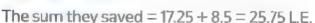
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Example 1

Soha saved 17.25 L.E. and her brother Amgad saved 8.5 L.E. Find the sum they saved.







Example 2

Wael has 14.75 pounds and his sister Mariam has 950 plasters. Find the difference between what they have in pounds.

Solution [V]



The difference – 14.75 pounds – 950 piasters = 14.75 pounds - 9.5 pounds = 5.25 pounds



Example 3

Waleed bought a pair of trousers for 89.6 L.E. and a shirt for 30.75 L.E. if he gave 200 L.E. to the shopkeeper.

how much change remained with Waleed?

Solution W

- The price of pair of trousers and shirt 89.6 + 30.75 = 120.35 L.E.
- The change remained with Waleed = 200 120.35 = 79.65 L.E.

Notes for parents:

 Some story problems have hidden question or questions that must be answered before you can solve the problem. You have to determine what operation to use and what strategies you will use to help you figure out how to solve the problem.



Extreme

Decimal Story Frahlenis

on lesson 13

● REMEMBER ● B H day ○ ACOM

🚜 PROBLEM SOLVING

III From the school book

1. Mona has 3.95 L.E. and Manal has 6.3 L.E. How much do they have together?



2. A man bought some goods for 306.7 L.E. and sold them for 366.95 L.E. Find his profit.



3. Ibrahim had 53.75 L.E. He spent 35.05 L.E. Find the remainder with him.



4. Mazen has 35 L.E. He bought a ball for 9.75 L.E. and a book for 840 P.T. How much money was left with Mazen?



5. Ali has 24.75 L.E. and Ahmed has $15\frac{1}{4}$ L.E. Find how much money Ali and Ahmed have together.



6. Hossam has 4.25 L.E. and his sister Hend has 980 P.T.

Find the difference between what they have in pounds.



7. Hanaa has 200 pounds. She wants to buy a pair of shoes for 99.8 L.E., a bag for 45.75 L.E. and a dress for 70.25 L.E. Can she buy all what she wants? Why?



8. White perch is 110 centimeters long and more than 5 years old. It weighs 113.39 kilograms and the vundu catfish weighs 38.1 kilograms and is 188 centimeters long. What is the total mass of both the Nile perch and the vundu catfish?



- 9. Read the passage and then respond to the questions.
- You will now travel from Khartoum to Juba in South Sudan to see the source of the White Nile. This trip is 1,941.2 kilometers. Juba is also on the bank of the White Nile. From Juba, you will travel on to Jinja, Uganda. It is a distance of 687.9 kilometers.

Jinja is located near the source of the White Nile.

How long is your journey from Khartoum to Jinja?

a. Copy the place-value chart and record the addends.

Thousands		Ones			Decimals	5
0	Н	Т	0	Tenths	Hundredths	Thousandths

b. Write and solve an addition equation using the two decimal numbers.

10. We Read about two other famous deltas in the world and then answer the questions.





The Ganges Delta is another famous river delta. It is in the South Asia area of Bangladesh and India. The delta plain is about 350 kilometers wide along the Bay of Bengal. This delta is formed by sediment that washes down from the Himalayan mountains.

In North America, the Mississippi River flows south 3,778.74 kilometers from the state of Minnesota to the Gulf of Mexico. At its widest, the Mississippi Delta is 140.01 kilometers.

- Order the widths of the three deltas from narrowest to widest.
 [Nile = 249.448 kilometers wide].
- Find the difference between the width of the Ganges Delta and the width of the Nile Delta.
- 11. Read the passage and answer the questions.



The Tahya Misr Bridge was built in 2016 in Cairo. It serves as a connector across the Nile from northern and eastern Cairo to western Cairo. The bridge is 540 meters long and 67.3 meters wide. It holds the world record for the widest cable-stayed bridge in the world The longest cable-stayed bridge is the Jiaxing-Shaoxing Sea Bridge in China. Although it is the longest, it is 11.7 meters thinner than the Tahya Misr Bridge. How wide is the Jiaxing-Shaoxing Sea Bridge?

- 12 The total length of the Tahya Misr Bridge is 16.7 kilometers and consists of five bridges that connect several areas. The longest of these bridges is the Shobra neighborhood bridge, followed by the Ring Road intersection bridge.

 If Rami travels the length of the Tahya Misr Bridge and then returns, how many kilometers in total did he travel? Write an equation and your answer.
- The total length of the Tahya Misr Bridge is 16.7 kilometers. Salem rode his bike along the pedestrian section of the bridge. He rode 3.25 kilometers before he had a flat tire. How many more kilometers does he need to travel?
- The Tahya Misr Bridge was built using 200 cranes. The cranes varied in size and weighed between 6.44 and 544.3 tons (1 ton 1,000 kilograms). What is the difference between the lightest crane and the heaviest crane?
- 15 Rashad and his father went on a fishing trip to Lake Nassar. They each caught a huge vundu catfish. The first one weighed 53.25 kilograms and the smaller one weighed 46.8 kilograms. How much did the fish weigh in all?
- 16. 🖾 Use the chart to solve each problem.

Nile Rive	rFish
Name	Length
African Tigerfish	104.902 cm
Eel Catfish [Mudfish]	32.7 cm
Marbled Lungfish	201.168 cm
African Knifefish	30.2 cm

- a. Ehab and his brother went fishing for 2 days. On the first day, they each caught an African tigerfish. On the second day, Ehab managed to catch a marbled lungfish. What is the total length of 2 tigerfishes and 1 marbled lungfish?
- **b.** Bassem is an ichthyologist. He was comparing the longest length of fish in the table to the shortest length of fish. What is the difference in length?
- c. Bassem collected a sample of three African knifefish. The first one was 29.28 centimeters, the second was 29.255 centimeters, and the third was 35.17 centimeters. What is the difference between the longest and the shortest fish in the sample?

Unit One Assessment



1. Choose the correct answer.

a.
$$1.2 - 0.95 =$$

b.
$$42.18 \times 10 =$$

A.
$$10 + 5 + 0.1 + 0.005$$

B.
$$10 + 5 + 0.05 + 0.001$$

C.
$$10 + 5 + 0.01 + 0.005$$

D.
$$10 + 5 + 0.1 + 0.05$$

e.
$$3.2 + 4.055$$
 $7.005 + \frac{1}{4}$

2. Complete.

d. 4.
$$7 + 5.5 = .89$$

e.
$$58.479 \approx 58.5$$
 (to the nearest ———————].

$$f. 4,207.03 + 8,929.8 =$$

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

b.
$$999.9 - 99.99 = 900.09$$

c.
$$70.001 + 1.70 = 71.71$$

d. 4.001 + 15.9 estimate 20

[]

e. $4\frac{8}{100} \approx 4.08$ (to the nearest Tenths).

.

f. 0.03 = 30 Thousandths.

[]

4. Match.

a. 42.1 ÷ 10

1. 0.421

b. 42.1 × 10

2. 421 Tenths

c. 0.4 + 0.02 + 0.001

3. 4.21

d. 43.355 – 1.255

- 4. 400 + 20 + 1
- 5. Marvina walked from home to her school a distance 1.215 km., then she walked from her school to her grandmother home a distance 2.09 km.

What is the total distance did Marvina cover?

- 6. If the sum of two demical numbers is 40.1 and the smaller number of them is 4.992,
 - what is the greater decimal number?

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2

Number Relationships

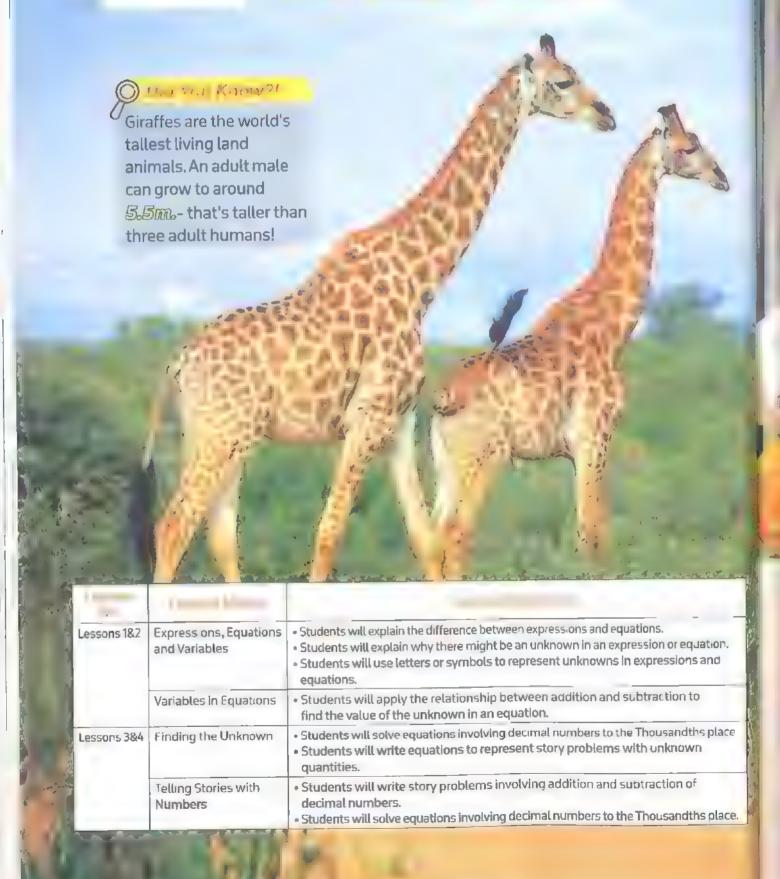
» Concept 1: Expressions, Equations and the Real World

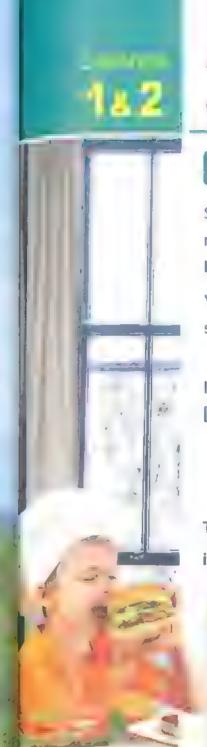
» Concept 2: Factors and Multiples



Concept (

Expressions, Equations and the Real World





ace.

- Expressions, equations and Variables
- · Variables in Equations

Learn 1

Mathematical expressions and equations

Sameh saved 25 L.E. to buy his favourite meal which costs 52 L.E.

(25+?=52)

How much does Sameh need to save more?

You can translate this problem into a mathematical statement contains a missing number as

If you replace the missing number by any letter [x,y,a,b,...], you will get:

$$25 + x = 52$$

The statement 25 + x = 52 is called an Equation and the used letter "x" is called symbol, variable or unknown.



Mathematical expression is a statement contains numbers or numbers and symbols separated by one or more operations as:

[+,-,× and ÷] and doesn't

Equation is a mathematical expression contains the equal sign "=".

Examples:

contain the equal sign "=".

▶ Examples:

$$-24.8 - x = 17.5$$

$$-36.5 + 14.1 = k$$

$$•4.2 + 1.5 = 8.9 - 3.2$$

$$\cdot$$
 7.36 + 1.036 + 2.5 = b

Notes for parents:

Ask your child to explain the difference between expression and equation.

Example 1

Read the following mathematical statements, then sort them into equations, expressions or neither.

$$13.35 + x = 16.25$$

$$•42 + k = 3.15$$

$$\cdot 55 - m = 17$$

• Sara bought a shirt for 145.75 L.E. and a skirt for 189.5 L.E.

$$\sim 30 \times m = 300$$

$$\cdot$$
 y = 2.55 + 3.13 + 7.15

• Sum of two numbers is 85.25 and one of them is 25.15.

What is the other?

$$2.5 + 3.6 = 1.8 + 4.3$$



Solution []

Equations	Expressions	Neither
• $13.35 + x = 16.25$ • $55 - m = 17$ • $30 \times m = 300$ • $y = 2.55 + 3.13 + 7.15$ • $2.5 + 3.6 = 1.8 + 4.3$	 • 25.06 + 6.2 + 5 • 42 + k − 3.15 • z ÷ 2 + 5 	 Sara bought a shirt for 145.75 L.E. and a skirt for 189.5 L.E. Sum of two numbers is 85.25 and one of them is 25.15. What is the other?

Vine de

your understanding

Write "equation, expression or neither" in front of each statement.

a. Hany saves 15 L.E. every day. What does Hany save in the week? {

b. 2.45 + 13.12 - 5

[_____

c. 1.8 + x = 2.8

[____

d. 3.6 + 1.4 = 5

[_____

e. 35.45 – k = 15

[----]

f. The sum of two numbers is 13.8

· - - :

Notes for parents:

• Explain that the equation doesn't change if the symbol is changed for example, the two equations $2.5 \pm x = 3.4$ and $2.5 \pm y = 3.4$ are equivalent.

Equations in real world:

You can use many equations in your daily life, sometimes you need to write equations to help you solve story problems.

Example 2

Youssef has 90 L.E. Youssef and his sister Sandy have together 150 L.E.

If their sister Eman has 110 L.E.,

write an equation to represent each of the following:

- a. The sum of money that Youssef and Eman have.
- b. The money that Sandy has.





b. 150 - 90 = y

or 90 + y = 150

or 150 - y = 90



The symbol x represents the total money that Youssef and Eman have.



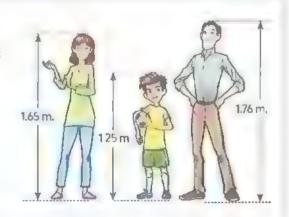
The symbol y represents the money that Sandy has.



your understanding

Father, mother and son, their heights are shown.

- a. Write an equation to represent the sum of heights of mother and son.
- b. In the equation 1.65 \pm x = 1.76, what does the symbol x represent?



[·] Let your child use letters to represent unknowns in equations.

Learn 2

Variables in equations

Solving equation means finding the value of the variable in the equation.

You can solve equation in many ways:



Example: 15 + x = 18

What number plus 15 equals 18?

The answer is 3

then x = 3

(a) Inverse operation

Example: y = 3.45 = 1.32

$$y - 3.45 = 1.32$$

, then
$$y = 1.32 + 3.45 = 4.77$$

tising bar model

Example: 4.76 - b = 2.25

4.76

2.25

Example 3

Solve the following equations.

a.
$$3 + P = 10$$

b.
$$2.13 + 3.45 + h = 7.85$$

c.
$$5.83 - k = 3.8$$

Solution [V]



You can use any way to solve an equation.

a. Using mental math strategy:

$$3 + P = 10$$

, the number if we add to 3 the sum is 10 is the number 7

, then
$$P = 7$$

eneck your answer

Replace the variable "P" by 7,

3+(7)=10

, then the solution is correct.

b. Using inverse operation strategy:

$$2.13 + 3.45 + h = 7.85$$

$$h = 7.85 - 5.58$$

Check your answer

Replace the variable "h" by 2.27

, 2.13 + 3.45 + 2.22 = 7.85

then the solution is correct.

Notes for parents:

• If your child struggle to see the relationship between the numbers, review fact families

c. Using part-to-whole bar model strategy:

$$5.83 - k = 3.8$$

5.	83
k	3,8

$$k = 5.83 - 3.80 = 2.03$$

Check your answer

Replace the variable "k" by 2.03

1

your understanding

Solve each of the following equations.

a.
$$6.45 + x = 10.48$$

b.
$$k = 6.18 = 2.59$$

c.
$$2.85 + 3.15 + n = 7$$

d.
$$3.36 + 2.12 = 1.8 + h$$



[·] Let your child check his/her answer using fact family.

Exercise

8

on lessons 1&2

· Lara mas, Figurians on W. mahres

· Variables in Equations

-	r)	c	1.4	c	0.4	100	r	10
	К	L	M	Ų	14	Ħ	ţ.	34

1 11 17				
	4	.1	-19	

PROBLEM SOLVING

From the school book

1. Mark (/) for the correct answer.

	Equation	Expression	Neither
3.6 + x + 5.45			
2+3=4+1			
35.6 + 4.23 = x			
Sum of two numbers is 15			
8.43 - 2.34 = y + 2.85			
15.68 more than a number			
k-15.8 + 7.18			

(1)	Write equation,		many and the later of the later	To make a time many	Alleria de com-	lama el cabe
/.	write equation.	exoression	or neither	DELWEEN	the two	DI dukets.
Allers Pr	THE THE WHITEHOUSE	Stabil Annuals	At 110141161			

a.
$$3.6 + 1.6 = x$$

$$c. 7.5 + 3.65$$

$$e. 14 \times 7 = x$$

f.
$$9 - x = 3.5$$

g.
$$4.7 + 3.6 = M$$

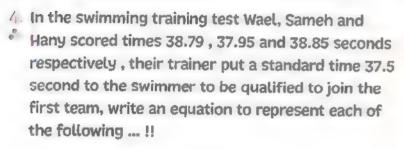
h.
$$345.45 - 123.8 = x$$

i.
$$6.4 + 3.2 + 8$$

m.
$$56 - x = 47.5$$

r.
$$7.3 + 4.5 + 2.3 = A$$

- Write an equation with a variable to represent each of the following.
 - a. The sum of a number and 6.5 is 9
 - b. A number if added to 1.7 the sum is 2.8
 - c. If 9.23 is subtracted from a number, then the result is 23.15
 - d. Sum of two numbers is 17.35 and one of them is 14.15





- a. The sum of Wael and Hany scores.
- b. The difference between Sameh and Hany scores.
- c. The needed time that Hany needs to reduce his time to join the first team.
- d. The sum of the three swimmers scores.
- 5. A class contains 40 pupils, 25 from them are boys, write two equations to find the number of girls.

[1]

[2]

6. In a toy store the price of a ball is 38.75 L.E. and the price of a car is 42.5 L.E., write two equations to compare the two prices.

[1] -

)

]

[2]

In the toy store Sameh saw the opposite three toys, Sameh had 42 L.E., then he wrote some equations, what does the variable represent in each equation?

a. 64.5 + 36.75 = x

64.5 L.E.



Plane

C

b. 45.25 - 36.75 = y

c.
$$64.5 - 42 = b$$

d.
$$a + 42 = 45.25$$

e.
$$64.5 + 45.25 + 36.75 = d$$

f.
$$45.25 + 36.75 - 42 = m$$

- 8. If Gulf of Suez is 275 km. long and Aqaba Gulf is 180 km. long
 - Mariam wrote two equations to compare the lengths of the two gulfs.
 Here are her equations.

$$\bullet$$
 180 + x = 275

What does the letter x represent in these equations?

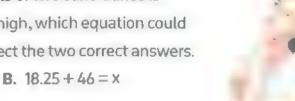
- A. The length in kilometers of one gulf.
- B. The difference in kilometers between the two lengths.
- C. The width of Sinai Peninsula.
- D. The distance in kilometers between the gulfs.
- If Mariam were to solve both of these equations correctly, what would be true?Select the two correct answers.
 - A. The value of x would be the same.
 - B. The answer to 275 180 would be 85 km.
 - C. The difference between the two lengths would be 95 km.
 - D. The distance in kilometers between the gulfs would be 95 km.
- 9. Adham was comparing the heights of sand dunes in the northern part of Sinai Peninsula in meters. He wrote the equation 27m 18m = x.

What does the x represent?

- A. The height of one of the dunes in Sinai.
- B. The sum of the heights of two dunes in Sinai.
- C. The difference between the tallest and shortest sand dunes.
- D. The distance between the tallest and shortest sand dunes.



If Farha knew that the sum of the heights of two sand dunes is
 46 meters and one of the dunes is 18.25 m high, which equation could she write to find the unknown height? Select the two correct answers.





- **A.** 18.25 + x = 46
 - **b.** [6.25 * 40 -
- C. 46 18.25 = x

- **D.** x = 18.25 = 46
- Ehab wrote the equation 42.7 + 38.3 = x. If each of the numbers represents the height of one of the dunes.

What does x represent?

- A. The height difference between the dunes.
- B. The sum of the heights of both dunes.
- C. The height of the taller dune.
- D. The distance between the dunes.
- 12. Solve the following equations, create a bar model to solve the following problems.

a. m — 4.25 = 11.75

b.
$$a + 19.5 = 30.8$$

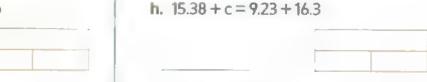
c. 1.2 = 2.4 - r

d.	8.76	=	5.35	+w	

e. 3.45 + n = 6.75



g. 2.53 + 4.38 + x = 12.76



13. Solve each of the following equations using inverse operation strategy.

a.
$$76.85 + q = 90.96$$

b.
$$v + 123.25 = 150.53$$

c.
$$h - 15.32 = 7.83$$

d.
$$2.5 + 13.25 + m = 24.85$$

e.
$$19.36 + n = 25.42 + 13.81$$

f.
$$28.34 - 5.35 = z + 14.83$$

g.
$$b = 24.13 = 26.17 + 5.3$$

14. Solve the following equations. Use a place value chart, if needed.

a.
$$8.23 + p = 10.24$$

$$p =$$

c.
$$2.45 + n = 5.24$$

$$n =$$

e.
$$h - 6.82 = 1.23$$

g.
$$5.52 + 2.01 + m = 9.21$$

b.
$$t = 2.45 = 0.26$$

d.
$$v + 42.89 = 100.01$$

f.
$$i = 12.40 = 3.01$$

h.
$$2.30 + 3.10 = 1.50 + v$$

- 15. Faten wants to fill a bag with 0.50 kilogram of lettuce. She has 0.38 kilogram of lettuce. What is the quantity of lettuce does she need?

 What would the variable in the problem represent? Solve the problem.
- 16. Ezz ran three days last week. He ran 5.24 kilometers on Monday and 6.50 km. on Wednesday. If he ran a total of 15 km. for the week, how much did he run on Friday? What would the variable in the problem represent? Solve the problem.

Multiple Choice Questions

Choose the correct answer.

1. Basma wanted to write an equation with a variable to represent "12.5 plus a number equals 15".

Which of the following would be correct?

A.
$$12.5 \pm 15 = x$$

B.
$$12.5 + x = 15$$

C.
$$15 + x = 12.5$$

D.
$$15 - x = 12.5$$

3. Suzan walked 1.63 km. in the first day and 1.72 km. in the second day, then the equation which represents the walked distance in the two days is

B.
$$d = 1.63 + 1.72$$

C.
$$d + 1.63 = 1.72$$

D.
$$1.72 - d = 1.63$$

5. Which of the following is an expression?

A.
$$2.36 + x = 14.78$$

C.
$$13.15 + 2.8 - x$$

2. If we subtract 5.23 from a number to get

A.
$$5.23 - x = 9.42$$

B.
$$5.23 + 9.42 = x$$

C.
$$x = 5.23 = 9.42$$

$$D_1 \times +5.23 = 9.42$$

4. Sum of heights of two building is 65.58 m. and the height of the first build is 29.17 m. , then the equation that represent the height of the second build is

A.
$$y = 29.17 + 65.58$$

B.
$$65.58 + y = 29.17$$

C.
$$29.17 - y = 65.58$$

D.
$$y + 29.17 = 65.58$$

B. Sara saved 20 L.E. per day

D.
$$1.75 + 1.25 = 2.1 + 0.9$$

6. Which of the following is an equation?

A.
$$15.28 - x + 1.3$$

B.
$$2.45 + x = 1.36 + 5.48$$

- C. Ramy bought two toys for 75.75 L.E. one of them is for 35.5 L.E. What is the price of the other?
- D. 21.36 + x
- 7. 1fx + 53.8 = 65.9, then x =

8. 77.85 + b = 99.85, then b =

9. m - 2.38 = 5.21, then m =

10. 8.24 - y = 3.12, then y =



- · Finding the Unknown
- Telling Stories with Numbers



Solving equation with numbers to the Thousandths place

In this lesson, you will solve equations involving decimal numbers to the Thousandths place using inverse operations and using part-towhole bar models.

Example 1

Solve each of the following equations.

a.
$$2.436 + x = 5.043$$

b.
$$y = 3.46 = 1.568$$

Solution [V]





b.
$$y = 3.46 = 1.568$$
 [Use inverse operation] $y = 1.568 + 3.46 = 5.028$

Notice

bar model.



[Use inverse operation]

Example 2

Hany was travelling to Alexandria from his home which is at a distance 243.865 km. He covered a distance 115.782 km.

What is the remaining distance to Alexandria?

Solution [7]



 The total distance = 243.865 km. [Whole]



(Part)

The remaining distance = x km.

• The equation is $\times + 115.782 = 243.865$

Subtract to find the part (x)

x = 243.865 - 115.782 = 128.083 km.

243.865

115.782

Another solution using inverse operation

x + 115.782 = 243.865

x = 243.865 - 115.782= 128.083

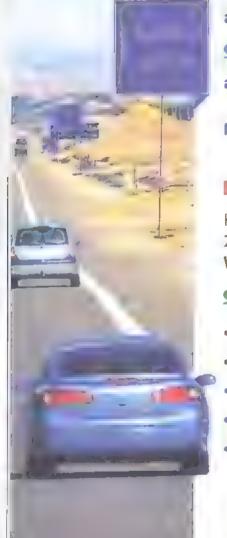
Check your answer:

128.083 + 115.782 = 243.865

(Yes it is correct)

Notes for parents:

- Addition is used when the two parts are known and the whole is unknown.
- · Subtraction is used when the whole and one part are known and the other part is unknown.



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Example 3

Islam weighs some bananas, the scale reading is 1.75 kg. He increases some apples on the scale pane, the scale reading becomes 5.83 kg.

What is the weight of the apples?



Solution [8

• Bar model :

5.83

n | 1.75

• Equation : m + 1.75 = 5.83

• Solution: Subtract to solve: m = 5.83 - 1.75 = 4.08 kg.

your understanding

A truck carries 1.35 ton of fruits and 2.456 ton of vegetables. What is the total load of the truck?



Help your child write the equation to represent a story problem with an unknown quantity

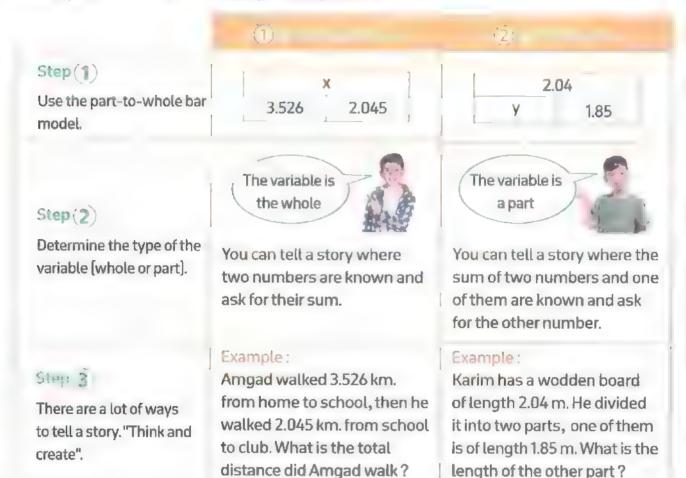
What is the story?

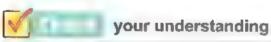
If you are given the two equations:

(1) 3.526 + 2.045 = x

(2) v + 1.85 = 2.04

How do you tell a story modeled by each equation?





Write a story problem for the equation, then solve it.

x + 1.357 = 2.18

Notes for parents:

· Help your child write his / her own story for each equation in this page.

Exercise

on lessons 3&4

- · Financy the Unimown
- Teding Stories with Hundrers

REMEMBER



From the school book

1. Find the value of each variable in the following part-to-whole bar models.



41.621

2. Match.

a.
$$3.648 - x = 3.625$$

b.
$$x + 3.8 = 6.2$$

c.
$$x - 8 = 14$$

d.
$$3.254 + x = 3.275$$

$$x = 0.021$$

52.321

$$x = 0.023$$

$$x = 2.4$$

3. Solve each of the following equations:

a.
$$4.2.342 + n = 3.418$$

b.
$$x + 1.354 = 3.17$$

c.
$$1.46 + m = 2.461 + 3.015$$

f.
$$k = 2.145 = 2.34 = 1.567$$

g.
$$\Box c = 3.425 = 2.520$$

h.
$$\bigcirc$$
 23.024 + k = 25.130

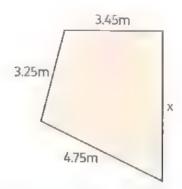
i.
$$z = 5.235 = 1.2$$

j.
$$\triangle x - 1.241 = 0.213$$

k.
$$(= 3.41 - c = 1.782)$$

$$l. 2.563 - b = 1.03 + 0.568$$

4. In the perimeter of this shape is 16.70 meters, what does x equal?



- 5. In each of the following story problems, write an equation match it, then solve.
 - a. The weight of Mariam is 35,235 kg, and the weight of Luci is 42,012 kg. What is their weight together?



b. Nada bought a sandwich for 36.85 LE and 250 m.L of juice for 7.5 L.E.
What is the cost of the meal?



c. Ola needed 10 meters of wood to build a garden bed.
She found 3.5 m. in her garage, How many more meters of wood does she need for the bed?



d. Bassem is taking a bus from Cairo to Ras Muhammad National Park to visit the coral reefs. The total journey is 492.64 kilometers. After 396.48 km., the bus stops in El Tor to pick up more passengers. How far is El Tor from Ras Muhammad National Park?



e. Bassem and his friend Jana were snorkeling in
Ras Muhammad National Park on the coral reef.
Bassem saw a hawksbill sea turtle that was 0.78 meter
long. Jana saw a green turtle that was 0.58 m. longer.
How long was the green turtle?



f. A water tank was filled with 78.563 liter. If 36.156 liters is poured from it, how much liter of water did remain?



g. Sameh stood on the balance carrying a bag of weight 10.953 kg., the balance reading was 93.215 kg. What is the weight of Sameh?



h. At the market, Bassem bought two melons for a total weight of 2.64 kilogram. If one melon weighed 1.36 kg., what was the weight of the other melon?



 In Jana's backpack, she has a water bottle that weighs 1.5 kilograms, books that weigh 2.451 kg. and a snack.
 Her filled backpack weighs 4.535 kg.
 How much does her snack weigh?



j. Nagi is training for a race. Each day of the week he runs 3.5 kilometers. If he runs for 10 days, how far will he have run?



k. Mina car petrol tank contains 50 liters of petrol, he went to Alexandria, the car consumed 28.95 liter, then he wants to travel to Matrouh. The car will consume 43.5 liter from Alexandria to Matrouh.

How many more liters does Mina need to fill in the tank?



6. What is the story?

Write a story problem for each of the following equations, then solve it.

a.
$$5.25 + 3.8 = n$$

b.
$$7.85 - 3.685 = y$$

c.
$$\Box x + 2.75 = 12.5$$

d.
$$124.6 - 72.25 = m$$

e. (3
$$34.750 - s = 15.25$$

f.
$$56.125 - d = 3.853$$

Militable Chesto Conde

C mere the con vertices, 1

1. If
$$p + 3.562 = 5.562$$
, then $p =$

A. 1

B. 2

C. 3

- D. 2.001
- 2. If 3.462 x = 1.451, then x =
- A. 4.913
- B. 2.001
- C. 2.011
- D. 4.914

8.368

5.032

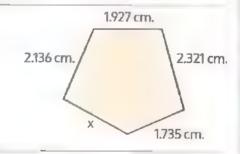
3. If
$$m = 3.459 = 4.213$$
, then $m =$

- A. 0.754
- B. 1.672
- C. 0.632
- D. 7.672
- 4. In the opposite part
 - to whole bar model

, the value of m = ---

- A. 13.4
- B. 3.336
- C. 10.456
- D. 2.832
- 5. For the equation: 7.325 x = 4.127, which of the following part to whole bar model is suitable?
 - 7.325 4.127
- 7.325
 - x 4.127
- 4.127
 - 7.325 x
- D.
 - 4.127 3.198

- 6. In the opposite figure, the perimeter of the shape is 10.177 cm., then the value of x
 - A. 1.862 cm.
- B. 2.135 cm.
- **C.** 2.058 cm.
- D. 2.013 cm.



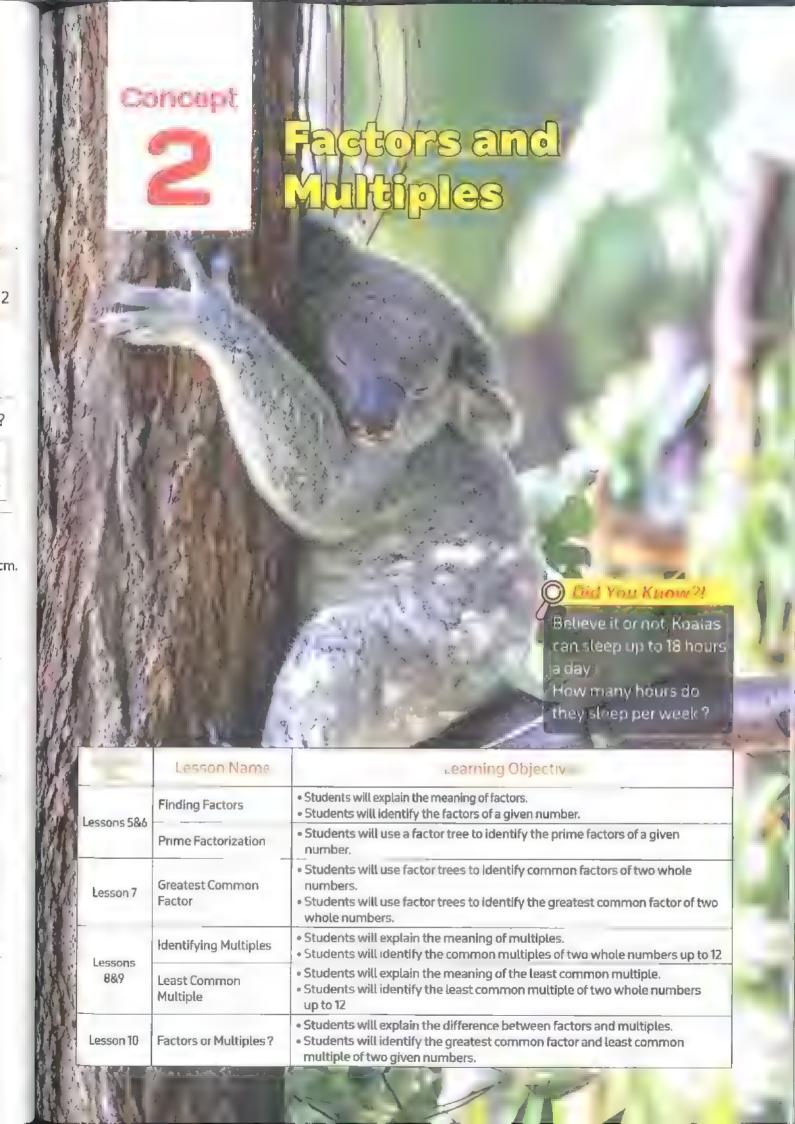
- 7. The weight of a golden ring is 3.258 gm. and that of a golden bracelet is 12.721 gm., then the equation which represents this story is
 - **A.** 3.258 + x = 12.721

B. 3.258 + 12.721 = x

C. 12.721 - 3.258 = x

- **D.** 12.721 x = 3.258
- 8. Nada weight was 93.738 kg. She decided to make a diet, her weight becomes 78.135 kg. What weight does Nada lose?
 - A. 14.923 kg.
- **B.** 12.731 kg.
- C. 10.423 kg.
- **D.** 15.603 kg.
- 9. A truck was loaded with 6112 tons of fruits and vegetables. If the weight of fruits is 2.865 tons, what is the weight of vegetables in tons?
 - A. 8.977
- **B.** 7.879
- C. 3.247

- **D.** 8.793
- 10. Yosra mixes 0.05 kg. of fertilizer with 1.386 kg. of soil, she fills a pot with the mixture and has 0.135 kg. left over. How much mixture went into the pot?
 - A. 1.436 kg.
- B. 1.571 kg.
- C. 1.305 kg.
- D. 1.301 kg.



5,6

- Finding Factors
- Frime Factorization



I ldentify factors of a whole number

- A factor is a number multiplied by another number to get a product.
- Examples:

$$1 \times 18 = 18$$
 $2 \times 9 = 18$ $3 \times 6 = 18$
Factor × Factor = Product | Factor × Factor

- A factor of a number evenly divides into that number without any remainder. For Example . 2 is a factor of 18 because $18 \div 2 = 9 R O$
- You can find factors of any number using many ways:
- Factor pairs tree Factor rainbow Factor T-chart.

Example 1

Find all factors of the number 18

Solution [V]



, then the factors of 18 are: 1, 2, 3, 6, 9 and 18.



your understanding

Find all factors of each of the following numbers.

a. 24

b. 36

Notes for parents:

- Let your child find the factors of 15
- · Help your child show the factors by factor pairs tree, factor rainbow and factor T-chart.



How to determine which is a new open. In retor of a given number or not?

1	Is a factor of any number. Every number has a factor pair of 1 and itself	
2	Is a factor, if the digit in the ones place is even [The ones digit is : 0, 2, 4, 6 or 8].	8,24,48
3	Is a factor, if the sum of the digits is a number that exists when skip counting by 3s.	9,18,24
4	Is a factor, if the number is existing when skip counting by 4s.	8 ,12 ,16
5	Is a factor, if the ones digit is 0 or 5.	5,15,20
6	Is a factor, if the number is even and has a factor 3.	12,18,24
9	Is a factor, if the sum of the digits is a number that exists when skip counting by 9s.	9,27,45
10	Is a factor, if the ones digit is 0.	20,50,100

Example 2

Write Yes or No to indicate whether each value is a factor of the given number.

	Number	is 2 a factor?	Is 3 a factor?	Is 5 a factor?
a.	24			
b.	15			
C.	30			
d.	10			

Solution [7]

	Number	ls 2 a factor?	Is 3 a factor?	Is 5 a factor?
a.	24	Yes	Yes	No
b.	15	No	Yes	Yes
c.	30	Yes	Yes	Yes
d.	10	Yes	No	Yes

2

your understanding

Circle each number that 3 is a factor of it from the following.

- a. 35
- b. 21
- c. 36
- d. 49
- **e.** 45
- Ask your child more questions of factors such as: Is 2 a factor of 14? Is 5 a factor of 61? and more
 questions, then let your child explain how did he/she know.

ldentify the prime factors of a whole number (Prime factorization)



A Prime number is a whole number that has exactly two different factors, 1 and itself.

A Composite number is a whole number that has more than two factors.

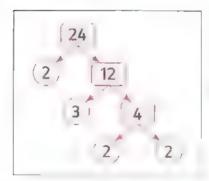
How can you write a number as a product of prime factors?

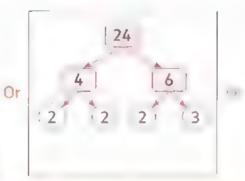
Every composite number can be written as a product of prime factors. This product is called the prime factorization of a number. You can use a "prime factor tree" to find the prime factorization.

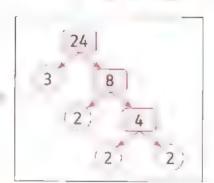
For Example:

To write 24 as a product of prime factors (prime factorization):

- Write 24 as a product of two factors.
- Write each composite factor as a product.
- Continue until all branches end in prime number.
- Circle the prime factors and put a square around the composite factors.
- The prime factorization of 24 is a multiplication string of the circled prime factors.







$$24 = 2 \times 2 \times 2 \times 3$$

Notes for parents:

 Give your child a group of numbers and ask him/her to identify the prime numbers and the composite numbers

Example 3

Find the prime factorization for each of the following numbers.

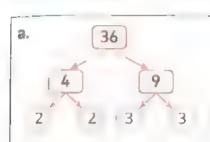
a. 36

ion)

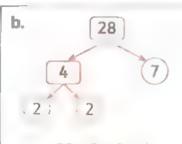
b. 28

c. 48

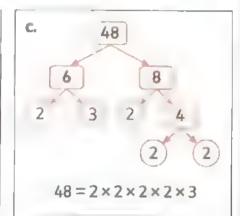
Solution [?



$$36 = 2 \times 2 \times 3 \times 3$$

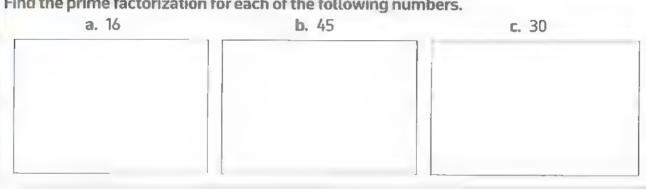


$$28 = 2 \times 2 \times 7$$



your understanding

Find the prime factorization for each of the following numbers.



Help you child by starting his/her factor pairs tree with at least one prime number, so that only one branch continues-this makes it visually easier to manage. Remind him / her to circle the prime numbers as he / she gets. This will help him / her list all the prime factors and also write the prime factorization.

Product of prime factors

Given that 2, 2 and 3 are the prime factors of a number.

What is this number?

The number = The product of all the given prime factors

, then the number = $2 \times 2 \times 3 = \boxed{12}$

What is its composite factors?

Composite factor = Product of 2 or more

factors from the prime factors

, then 4, 6 and 12 are the composite factors of 12

Join "1" to the list

Notice

The none prime factors of 12 are: 1,4,6,12

Notice

You can find all none prime factors of 12 using (factor pairs tree / factor rainbow / factor T-chart), then cancel the prime factors from them.



X

Example 4

Find the product of the prime factorization listed, then list all other factors of the product.

- a. 2×2×7
- b. 2×3×5
- c. 2×2×2×3

Solution []

- a. Product = $2 \times 2 \times 7 = 28$
- b. Product = $2 \times 3 \times 5 = 30$
- c. Product = $2 \times 2 \times 2 \times 3 = 24$

- Other factors are: 1,4,14,28
- Other factors are: 1,6,10,15,30
- Other factors are: 1, 4, 6, 8, 12, 24



your understanding

Find the number whose prime factorization is given, then find the other factors for each of the following.

- a. 2×3×3×3
- **b.** $2 \times 5 \times 5$
- c. 3×3×5

Notes for parents:

· Remind your child that not all odd numbers are prime numbers.

Exercise

on lessons 5&6

- · Finding Feeters
 - Prime Factor funtion

	REMEMBER	PROBLEM SOLVING	From the school book							
1. Find	Find all the factors of each of the following numbers.									
a. 1	2									
	Title and head		1							
Fi	actors of 12 are : ——									
b. 2	4									
	Factor pairs tree	Factor randows	(do) of the first							
Fa	actors of 24 are:									
c . 19)									
	1111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	F (()) .	· · · · · · · · · · · · · · · · · · ·							
Fa	actors of 19 are: ——									
List a	all the factors of each of th	e following numbers.								
a. 14		b. 16								
c. 28	3	d. 32 —								
e. 🕮	15	f. 42								

3. Fill in the missing factors represented by the variables.

a,
$$(4 \times m = 16, m =$$

c.
$$4.0 \times 15 = 45$$
 , $v =$

d.
$$0.6 \times t = 42$$
, $t = -$

f.
$$12 \times n = 12$$
, $n =$

Select Yes or No to indicate whether each value is a factor of the given number.

	Number	Is 2 a factor?		ls5af	actor?	Is 4 a factor?	
a.	40	Yes	No	Yes	No	Yes	No
b.	12	Yes	No	Yes	No	Yes	No
C.	35	Yes	No	Yes	No	Yes	No
d.	17	Yes	No	Yes	No	Yes	No

5. Circle the factors of the numbers listed.

a. 15: 2 5 10 b. 30: 2 5 10

c. 12: 2 5 10 d. 25: 2 5 10

1 2 3 e. 16:

8 10

- f. 20:
- 5 7

6

7

5

- 6. Complete with "is a factor of" or "is not a factor of".
 - a. 7

b. 5

52

c. 2

d. 3

36

- e. 6 . -
- 96

100

4

f. 1 -

67

g. 19

19

h. 9

27

7. Complete with "Prime" or "Composite".

a. 2 is

b. 4 is

- c. 29 is ———
- d. 3 is

e. 5 is

- f. 6 is ----
- g. 7 is —
- h. 11 is

11.

- j. 12 is
- k. 16 is -
- t. 23 is

8. Write the factors of each number, then determine if it is a prime or a composite number.

- a. The factors of 7 are:
- _____, then 7 is a ____
- number.

- b. The factors of 16 are: -
- _____, then 16 is a
- number.

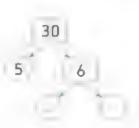
- c. The factors of 31 are:
- --- ,then 31 is a --
- number.
- d. The factors of 27 are: ______, then 27 is a

- e. The factors of 39 are: -
- , then 39 is a
- number.

- f. The factors of 47 are:
- - ,then 47 is a
- --- number.

9. Factorize to prime factors.

a.

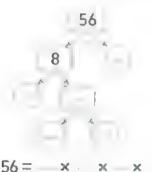


$$30 = \times \times$$

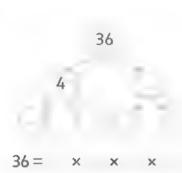
b.

6

C.



d.



10. Factorize each of the following numbers to its prime factors.

a. 8

b. 15

c. 21

d. 32

e. 36

f. 42

g. 49

h. 72

i. 80

1. 90

k. 99

L 31

11. Find the product of the prime factorization listed, then list all other factors of the product.

a. 2 × 2 × 2 = ___

Other factors are:

c. $2 \times 3 \times 3 =$

Other factors are:

b. 🗀 2 × 2 × 5 = _

Other factors are:

d. 2×5×5=

Other factors are:

e. 🔙 2 × 3 × 7 =

Other factors are:

 $q. 2 \times 2 \times 3 \times 3 =$

Other factors are:

f. (112×2×2×7=

Other factors are:

h. $3 \times 3 \times 7 = ----$

Other factors are:

12. Complete.

- a. is the only even prime number.
- b. The prime number has two factors which are ——— and
- E. 1 is not a prime number because
- d. The 2-digit prime number which is less than 13 is
- e. The prime numbers between 60 and 70 are
- f. The prime factors of 14 are
- g. The prime factors of 19 are
- h. The prime factors of 60 without repetition are
- i. The number whose all prime factors are 2,3 and 5 is
- j. The greatest factor of the number 72 is
- k. The greatest prime factor of the number 28 is
- L. The smallest factor of the number 21 is
- m. The smallest prime factor of the number 42 is
- 13. A bicycle race was planned from Sharm El-Sheikh to Taba along the Gulf of Aqaba. The distance by road is about 220 kilometers. The riders wanted to break up the ride into equal, whole-kilometer portions for rest and water stops.

Which of the following distances would divide the entire ride into equal, whole-kilometer distances?

- 1. Choose the two distances that the riders could use.
 - A. 10 km.
- B. 12 km.
- C. 20 km.
- D. 25 km.
- E. 50 km.
- 2. What other ways could the distance be divided into equal parts?
- The Gulf of Suez is the northwest arm of the Red Sea between Africa and Sinai Peninsula.

 The approximate length of the Gulf of Suez from its mouth at the Strait of Jubal to its head at the city of Suez is 314 kilometers. It varies in width from 19 km. to 32 km, and is linked to the Mediterranean Sea by the Suez Canal. The gulf is an important shipping route.
 - 1. Could you divide the width of 19 kilometers into smaller equal distances? What would the length of each distance be?

- 2. Could you divide the width of 32 kilometers into smaller equal distances? What would the lengths of some of the distances be?
- 3. How is finding factors similar to dividing numbers into equal parts?
- At the northern edge of the Gulf of Suez lies the Suez Canal. The Suez Canal extends 193 kilometers and cuts thousands of miles from the shipping routes between Europe and Asia. Before the canal was built, ships had to sail all the way around the southern tip of Africa. Now, they can pass directly from the Red Sea to the Mediterranean Sea.
 - 1. It takes 12 to 16 hours for a ship to go through the canal. Akram was curious. If a ship takes 12 hr and travels 193 kilometers, can it go an equal distance each hour? To solve the problem, he needs to know if 12 is a factor of 193. He makes a factor tree starting with 1 and 193. Basem told him the factor tree would not help him answer his question. Is Basem correct or incorrect? Why?
 - 2. Is 193 prime or composite?
 - 3. Is 12 a factor of 193? How do you know?
 - 4. Is 1 prime or composite or neither? Why?



Choose the correct answer.

- 1. The smallest prime number is
 - A. D
- B. 1
- C. 2
- D. 3
- 2. The smallest odd prime number is A. 1
 - B. 2
- C. 3
- D. 9

- The prime number between 44 and 50 is
 - A. 45
- B. 46
- C. 47
- D. 49
- 4 3,2 and 7 are prime factors of

 - A. 14
- B. 21
- C. 42
- D. 44

18

- 5. 2,5 and 7 are prime factors of
 - A. 25
- B. 35
- C. 65
- D. 70
- 6. Ahmed created this factor rainbow for 18,
 - What factors did he forget? 1 2
 - A. 8 and 10
- B. 5 and 3
- C. 4 and 4
- D. 3 and 6

- 7. All the factors of 25 are
 - A. 1,5,20
- B. 1,20,25
- C. 5,20,25
- **D.** 1,5,25
- 8. All the factors of are 1, 2, 3, 6,

 - 9 and 18
 - A. 9
- **B**. 18
- C. 36
- D. 54

- 9. 4 is a factor of
- A. 37
- **B.** 38
- C. 39
- D. 40

- 10. Which of the following is a factor of 10?
 - A. 30
- B. 20
- C. 15
- **D.** 5

- 11. 18 has factors.
 - A. 2

B. 4

C. 6

D. 8

- 12. Which of the following is a prime number?
 - A. 1
- B. 3
- C. 9
- **D.** 15

- 13. Which of the following is a composite number?
 - A. 1
- **B**. 31
- C. 33
- D. 43
- 14. Which of the following is NOT a prime number?
 - A. 2
- B. 5
- C. 7
- D. 9

- 15. All the following numbers are composite except
 - A. 66
- B. 67
- C. 68
- D. 69

- 16. Which statement is true?
 - A. 1 is a factor of only odd numbers.
 - B. 1 is not a factor of any number.
 - C. 1 is a factor of every number.
 - D. 1 is a factor of only 0.

Azza was traveling from St. Katerine to El-Tor on the coast. She made 24 cookies for the trip and wants to put them into bags for her siblings. Choose the set that lists ways she could divide the cookies into bags without any leftovers.

A. 2,4,5,6, and 8 bags

B. 3,5,7,10, and 12 bags

C. 2,3,4,6,8, and 12 bags

D. 3,4,6,10, and 12 bags

18. What is the best explanation for the difference between prime and composite numbers?

- A. A prime number has only 2 factors: 1 and itself. A composite number has more than two factors.
- B. A prime number has only 1 as a factor and a composite number has two factors.
- C. A prime number has only 2 factors. A composite number has 4 or more factors.
- **D.** A prime number can be factored in more than one way. A composite number can be factored in only one way.





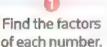


How can you find the greatest common factor (GCF) for two numbers ?

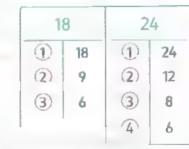
How can you find the greatest common factor of 18 and 24 [GCF]?

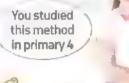
You can find the greatest common factor in two ways:

First very using listing method:



Determine the common factors of these numbers.







- A common factor of two numbers is a factor of each of these numbers.
- The greatest common factor (GCF)
 of two numbers is the greatest
 number that is a factor of both.

• Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Get the greatest • Common factors: 1, 2, 3, 6
factor of the

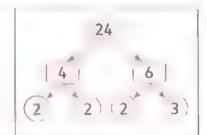
The greatest common factor [GCF]: 6

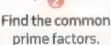
Second way using prime factorization:

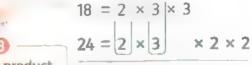
Factorize each number to its prime factors.

common factors.

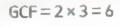








Find the product of these common prime factors.



Notes for parents:

 In primary 4, your child found common factors and explored the concept of greatest common factor (GCF). This lesson provides more practice with factor trees and the opportunity to explore how to find the GCF as well as other factors from the prime factorization.



Example 1

Find the factors of 48 and 36, then find.

- a. The common factors.
- **b.** The greatest common factor [GCF]

Solution [V]



- Factors of 48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
- Factors of 36: 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36
- a. The common factors are: 1, 2, 3, 4, 6, 12
- **b.** GCF = 12

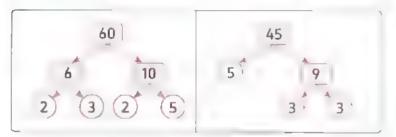


Example 2

Factorize 60 and 45 to their prime factors, then find the GCF

Solution [V]





$$60 = 2 \times 2 \times 3 \times 5$$

$$45 = [3] \times [5] \times 3$$

$$GCF = 3 \times 5 = 15$$





your understanding

Find the GCF of 36 and 54

Your child may still prefer to make lists to find common and greatest common factors, but understanding the prime factorization is important as your child moves into more complex factor.

11

Countriest Common Factor

on lesson 7

REMEMBER PROBLEM SOLVING	41 From the school book
Find the common factors and the greatest common factor (GCF) of:
a. 4 and 6	
Factors of 4:	
Factors of 6:	
Common factors:	GCF: ——
b. 10 and 30	
Factors of 10:	
Factors of 30:	
Common factors:	GCF:
c. 40 and 45	
Factors of 40:	
Factors of 45:	
Common factors:	GCF:
d. 54 and 18	
Factors of 54: —	
Factors of 18:	
Common factors:	GCF:—
e. 48 and 60	
Factors of 48:	
Factors of 60:	
Common factors:	GCF:

2. Find the prime factorization, then find the GCF

a.





Ċ.

40

48

d.



Factorize the following numbers to their prime factors, then find the GCF for them.

- a. 45 and 27
- b. 36 and 84
- c. 42 and 48
- d. 39 and 78
- e. 35 and 42

4.	Find	the	GCF	of	the	given	numbers.
----	------	-----	-----	----	-----	-------	----------

- a. 8 and 16
- b. 12 and 18
- c. 40 and 50
- d. 10 and 45
- e. 10 and 24
- f. 45 and 81
- g. 33 and 11

Put (\checkmark) for the correct statement and (X) for the incorrect statement.

- a. The common factors of 15 and 30 are 1,5 and 15
- b. The common factors of 9 and 36 are 1 and 3
- c. 1 is the GCF of 8 and 17
- d. The GCF of 4 and 6 is 12
- e. The GCF of 4 and 8 is 2
- f. The GCF of 30 and 60 is 10
- g. 1 is the GCF of any two prime numbers. [
- h. 0 is a common factor of every set of numbers.
- i. There are no common factors of 19 and 17
- j. All the factors of 50 are factors of 10

Two numbers, the prime factors of the first are 3, 3 and 5 and the prime factors of the second are 2, 2, 3 and 5, then:

• The first number = ---- • The second number = --- • Their GCF =

Greatest common factors: Work independently to complete the problems.

- 1. List the factors of 42
- 2. Complete the factor tree for 42 and write out the prime factorization.

42

2



- 3. Find the value of $n: n = 2 \times 2 \times 7$
- 4. What are the common factors of 42 and n?
- 5. What is the greatest common factor of 42 and n?
 - a. Shadi and Taha went diving to the steamship. They each stopped at intervals of equal depths to check their gear. Shadi dove to the stern at 30 meters below the surface. What are all the options of intervals he could take? [Stopping every 1 m is not practical, nor is going the entire distance.]
- A. 2m,3m,5m
- B. 2m,3m,5m,6m
- C. 2m, 3m, 5m, 6m, 10m, 15m
- D. 2m,3m,5m,6m,10m,12m
- b. Taha dove to the hull at a depth of 15 meters. What are the options of intervals he could take? [Stopping every 1 m is not practical, nor is going the entire distance.]
 - A. 3 m, 5 m

B. 2m,3m,5m

C. 2m,3m,5m,6m

- D. 2 m, 3 m, 5 m, 6 m, 10 m
- c. Challenge: If both divers stop at equivalent equal intervals, what is the greatest distance they can both dive before stopping?
 - A. 2 m

B. 3 m

C. 5 m

D. 10 m



a. Sylvia has 21 pencils and 14 erasers. She wants to put them in groups. What is the greatest number of groups that can be made so that each group has the same number of items?

How many pencils will be in each group? How many erasers will be in each group?

b. There are 40 girls and 32 boys who want to participate in lap on teams. If each team must have the same number of girls and the same number of boys, what is the greatest number of teams that can participate? How many girls will be in each team? How many boys will be in each team?



10. Find the common factors of 36,24,48

11. Find the GCF of 24,40,56



, c (D)

Multiple Choice Questions

Choose the correct answer.

1.	The	GCF	of 7	and	56 is

A. 1

B. 56

C. 7

D. 14

- 2. The GCF of 18 and 27 is
 - A. 1

B. 3

C. 6

D. 9

The GCF of 20 and 30

is _____

A. 1

B. 4

C. 5

D. 10

4. The common factor of all numbers

is _____

A. 0

B. 1

C. 2

D. 3

- 5. 1 and 7 are the common factors of -
 - A. 2 and 7
- B. 2 and 14
- C. 7 and 12
- D. 7 and 14

- Which two numbers are common factors of 48 and 54?
 - A. 2 .
- B. 6

C. 8

D. 9

E. 12

F. 24

- 7. Which two numbers are common factors of 27 and 63?
 - A. 2
- **B.** 3

C. 4

D. 7

E. 9

F. 11

- Which pair of numbers has the same greatest common factor as 42 and 12?
 - A. 9 and 6
- B. 8 and 24
- C. 16 and 60
- D. 18 and 30
- 9. Which pair of numbers has the same greatest common factor as 84 and 96?
 - A. 8 and 12
- B. 24 and 36
- C. 45 and 60
- D. 6 and 54
- Two groups took public transportation in Sharm El Sheikh. Each ticket costs the same amount of money. One group spends 16 L.E. and the other group spends 12 L.E. At most, how much does the greatest possible cost of each ticket? [Hint: Use the GCF]
 - A. 2 L.E.
- B. 4 L.E.
- C. 6 L.E.

D. 8 L.E.

8.9

- Isuntitying Multiples
- · Lensi Com men Multiple

9×2

8×2



6×2

5×2

4×2

3×2



1×2

Identifying multiples

- In primary 4, you have learned what is a multiple and now to find multiples of a whole number and common multiples of two numbers.
- If this lesson, you will review what you have learned before, and expand your knowledge of common multiples to learn how to identify the least common multiple (LCM).

Remember what is a multiple?

A multiple is the product of a given number and another whole number.

- You can find multiples of any number using many ways as:
 - Multiplying by the whole numbers.
 - 2 Skip-counting on the number line.



To find the multiples of 2, you can use any of these ways:



 $2 \times 0 =$, $2 \times 1 = 1$, $2 \times 2 = 4$, $2 \times 3 = 6$, $2 \times 4 = 8$, and so on.

Then the products 0, 2, 4, 6, 8, ... are called the multiples of 2

Using skip-counting by 2s on the number line.



Then the multiples of 2 are 0, 2, 4, 6, 8, 10, 12 and so on.

-

- Zero is a multiple for any number.
- The multiple of any number not equal to 0 is divisible by this number.

For Example 1

 $2 \times 5 = 10$ \longrightarrow 10 is a multiple of both 2 and 5

• 10 is divisible by 2

• 10 is divisible by 5

Notes for parents:

 Skip counting on the number chart helps your child notice the patterns to help him/her find the multiples more quickly.



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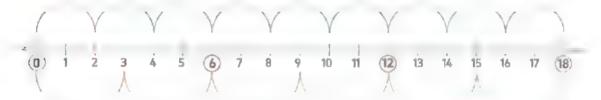
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Remember common multiples:

- Common multiples are multiples of two or more numbers.
- i.e. They are multiples that the numbers have in common.

Finding common multiples using the number line

Use a number line to find common multiples of 2 and 3.



The common multiples of 2 and 3 are 0,6,12,18,...and so on.

Zero is a common multiple for any numbers.

Example 1

Find the multiples of each of the numbers 4 and 6 up to 50, then find the common multiples between them.

Solution [



- The multiples of are: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48
- -The multiples of 6 are: 0 , 6 , 12 , 18 , 24 , 30 , 36 , 42 , 48
- The common multiples of 4 and 6 are: 0, 12, 24, 36, 48

your understanding

Find the multiples of each of 7 and 3 up to 50, then find the common multiples between them.

Solution [V]



The multiples of 7 are _

The multiples of 3 are ____

The common multiples are

Listing multiples help your child find common multiples.



Least common multiple (LCM)

Least Common Multiple [LCM]

The least common multiple [LCM] is the smallest number [other than 0] that two or more numbers have in common.

To find the LCM of two numbers or more, you can use one of the following two methods:

As a second of the second



Find the multiples of each number.



Find the common multiples of these numbers.



Find the smallest multiple other than zerol of them. Then it will be the LCM.

For Example:

To find LCM for 6 and 9:

- Multiples of 6 are: 0, 6, 12, 18, 24, 30, 36, 42, 48, 54,...
 - Multiples of 9 are: (0, 9, (18), 27, (36), 45, (54),...
- Common multiples of 6 and 9 [other than zero] are: 18, 36, 54,...
- E LCM of 6 and 9 is 18





Find all the prime factors of each of the given numbers.

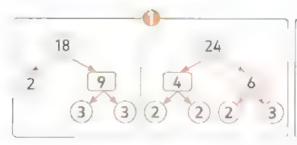


Array prime factorization of each number such that the similar factors lie on the same column.

Take a factor from each column, then find their product which is the LCM

For Example:

To find LCM for 18 and 24:







Notes for parents:

Ask your child what is the meaning of the least common multiple.

Example 2

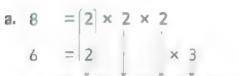
Find the least common multiple (LCM) for each of the following.

a. 8 and 6

b. 12 and 16

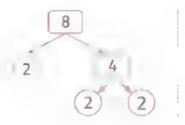
c. 4,12 and 8

Solution [V]



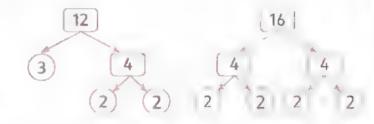
$$6 = 2 \times 3$$

$$LCM = 2 \times 2 \times 2 \times 3 = 24$$





b. 12 = $\begin{bmatrix} 2 \\ \times \end{bmatrix} \times \begin{bmatrix} 2 \\ \times \end{bmatrix} \times 3$ 16 = $\begin{bmatrix} 2 \\ \times \end{bmatrix} \times \begin{bmatrix} 2 \\ \times \end{bmatrix} \times$



c. $4 = 2 \times 2$ $|12| = |2| \times |2| \times |3|$ $8 = 2 \times 2 \times 2$ $LCM = 2 \times 2 \times 3 \times 2 = 24$ 12

Notice

The LCM for two or more prime numbers is the product of these numbers.

For Example:

- LCM for 5 and 7 is $5 \times 7 = 35$
- LCM for 2, 3 and 5 is $2 \times 3 \times 5 = 30$



[·] Let your child notice that prime factorization is the simplest way to find LCM of three numbers



your understanding

- 1. Complete.
 - a. 6 and 5
 - Multiples of 6 are : ________
 - Multiples of 5 are: -
 - LCM = _____

- **b.** 10 and 12
 - Multiples of 10 are:
 - Multiples of 12 are:
 - · LCM =
- 2. Using prime factorization, find LCM for each of the following.
 - a. 16 and 24 _____
 - b. 9 and 12

Helpful Hints

- 1 The multiples of 2 are the numbers whose ones digit is 0, 7, 4, 6 or 8
- 2. The multiples of 5 are the numbers whose ones digit is 0 or 5
- 3. The multiples of 10 are the numbers whose ones digit is 0
- 4. Zero is a multiple of any number.
- 5. Any number is a multiple of itself.
- 6 The product of two whole numbers (or more) is a multiple of each of these numbers.

For Example 35 is the product of 5 and 7 $(5 \times 7 = 35)$,

so 35 is a multiple of 5 and also 35 is a multiple of 7

- 7. The common multiples of two prime numbers are multiples of their product.
 - All common multiples of 2 and 3 are multiples of 6
 - All common multiples of 3 and 5 are multiples of 15

Notes for parents:

Direct your child to solve "check your understanding" problems. Review his/her answer.



f. The number

g. The number

From the school book

Multiples and common multiples

1.	Complete the following	lowing.				
0	a. List the first five	e multiples of 3				
	b. List the first fo	ur multiples of 5				
	c. L. List the firs	t five multiples of	6			
	d. List the firs	t six multiples of	7			
	e. List the first five	e multiples of 9				
	f. List the firs	t eight multiples (of 10			
	g. List the multip	les of 8 up to 60				
	h. List the multip	les of 4 which lie	between 1	and 40		
	i. All the multiple	es of 5 between 14	4 and 44 an	ę		
	j. All the multiple	s of 2 that are les	s that 10 ar	e		
		. II II. II				
2.						
	a. Is 34 a multiple	e of 9?		b. Is 40 a m	utiple of 8 ?	
	c. Is 35 a multiple	e of 4?		d. Is 30 a mu	ıltiple of 2?	
	e. Is 7 a multiple	of7?		f. Is 81 a mul	tiple of 9?	
3.	Complete.					
0	a. 28 = 7 ×	hence 28 is a m	•			
	b. 42 = 6 ×	— hence 42 is a m and is also a m	'		- diff	
	c. 60 = 10 ×	— hence 60 is a r			-	
	d. The number 12	is a multiple of 3	because:	=	_x	
	e. The number 2	is a multiple of 7	because:-	=	— ×	

is a multiple of 5 because: $40 = 5 \times$

is a multiple of 10 because: 150 =

a. Find the multiples of each of the numbers 2 and 3 up to 20, then find the common multiples between them.

The multiples of 2 are: —

The multiples of 3 are:

The common multiples are:

b. Find the multiples of each of the numbers 5 and 4 up to 30, then find the common multiples between them.

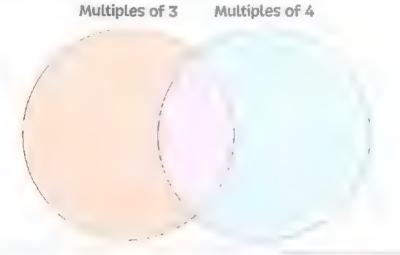
The multiples of 5 are:

The multiples of 4 are: -

The common multiples are:

- 5. Answer the following.
 - List the first five multiples of 5
 - List the first ten multiples of 2
 - What common multiples of 2 and 5 did you list?
- 6. L. Answer the following.
 - List the first five multiples of 8
 - List the first six multiples of 4
 - List the first five multiples of 6
 - What common multiples of 8, 4 and 6 did you list?
- 7. L. Answer the following.
 - List the first twelve multiples of 3
 - List the first twelve multiples of 4
 - What common multiples of 3 and 4 did you list?

• Use this information to fill in the Venn Diagram for the first 12 multiples of 3 and 4, placing the common multiples in the shared center.



8.	a.	Find a common multiple of 4 and 8
	b.	Find a common multiple of 5 and 4

- c. Find two common multiples of 4 and 6
- d. Find two common multiples of 3 and 9

9. Write the common multiples of.

- a. 3 and 5 which are less than 50
- b. 2 and 3 which are less than 30
- c. 2 and 5 which are between 20 and 75

10. Complete.

- a. The common factor of all the whole numbers is _____
- b. The common multiple of all the whole numbers is
- c. If the common factor of two numbers is 12, then these two numbers may be __ and ____
- d. If the common multiple of two numbers is 28, then these two numbers may be and _____

11	a	Select the three numbers that are NOT common multiples of 5 and 7.
	4,0 -	select the three harmoers that are NOT confinion that tiples of Sand 7.

A. 14

B. 21

C. 35

D. 55

E. 70

F. 105

b. Select the three numbers for which 24 and 32 are common multiples.

A. 2

B. 3

C. 4

D. 6

E. 7

F. 8

10

 Adel is buying cartons of eggs and bottles of juice at the supermarket to make breakfast for friends. Each carton contains 12 eggs. Complete the chart for Adel.

Cartons	1	2	1	3	4	5	6
Eggs	12						

• The juice comes in packs of 9. Complete the chart for Adel

Packs	1	2	3	4	5	6
Juice	9		,			

 If Adel is buying enough eggs and juice for 36 people, how many cartons of eggs and packs of juice will be need to buy for each guest to have 1 egg and 1 juice?

• Omar wants to take the bus to visit Ras Abu Galum. During the week, a bus leaves for Ras Abu Galum at 3 a.m. Additional buses leave every 3 hours. The last bus leaves at 12 p.m. What times can Omar catch the bus?



• On the weekend, the first bus leaves for Ras Abu Galum at 6 a.m. Additional buses leave every 2 hours until 12 p.m. What times can Omar catch the weekend bus?



• What times can Omar always catch a bus, whether it is a weekday or the weekend?

Local Common morning (CO)

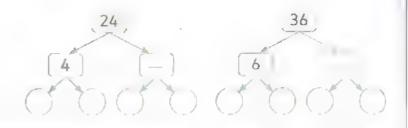
14. a. To find the LCM of 6 and 9:

- Multiples of 6:
- Multiples of 9:
- Common multiples of 6 and 9 (other than 0): —
- [LCM] of 6 and 9 is: _______

b.	b. To find the LCM of 3 and 6:	
	• Multiples of 3:	
	Multiples of 6:	
	• Common multiples of 3 and 6 (other than 0):	
	• (LCM) of 3 and 6 is :	
c.	c. 1 To find the LCM of 10 and 5:	
	Multiples of 10: ——	
	Multiples of 5:	
	• Common multiples of 10 and 5 (other than 0):—	
	• (LCM) of 10 and 5 is : ——————————————————————————————————	
d.	d. To find the LCM of 7 and 14:	
	• Multiples of 7 :	
	Multiples of 14:	
	Common multiples of 7 and 14 (other than 0):	
	• [LCM] of 7 and 14 is:	
e.	e. 🔝 To find the LCM of 5 and 11:	
	• Multiples of 5 :	
	Multiples of 11:	
	• Common multiples of 5 and 11 (other than 0) :	
	• [LCM] of 5 and 11 is: ———————————————————————————————————	
f.	f. 🔝 To find the LCM of 3 and 8 :	
•••	Multiples of 3:	
	• Multiples of 8 :	
	• Common multiples of 3 and 8 (other than 0):	
	• (LCM) of 3 and 8 is :	
g.		
	Multiples of 6;	
	Multiples of 10:	
	• Multiples of 15:-	
	• Common multiples of 6, 10 and 15 (other than 0):	
	• [LCM] of 6 , 10 and 15 is :	

15. Find the least common multiple.

a. 24 and 36



b. 15 and 18

18 =

LCM =

| 15 |

18

c. 12 and 9

12 =

9 =

LCM =





■. 32 and 48

32 =

48 =

LCM =





e. 6,9 and 8

6 =

9 =

8 =

LCM =

6

9

8

f. 12,9 and 18

12 =

9 =

18 =

LCM =

12

9

18

	g 7,6 and 12	7	6	[12]		
	6 =					
	12 –					
	LCM =					
1	For each group of the fol	lowing numbers, use the pri	me factorization	of each numbe	er to	
*	find the LCM:					
	a. 3 and 5	b. 8 and 12	c. 6	and 14		
	d. 16 and 22	e. 10,12 and 15	f. 18	, 30 and 42		
17	Put (√) for the correct st	tatement and (X) for the inc	orrect statement.			
	a. The LCM of 6 and 15 is 6	50		[]	
	b. The LCM of 3 and 7 is 14	4		[]	
	c. The LCM of 6,9 and 21	is 96		[]	
	d. The LCM of 4,6 and 9 i	s 32		[]	
	e. All common multiples	of 3 and 4 are also multiples	of 12	[J	
	f. The number 15 is a com	mon multiple for the numbe	ers 2,3 and 5	[)	
	g. All the multiples of 20 a	are greater than or equal to 2	0	[)	
	h. There are no common i	multiples of 7 and 9])	
	i. All the multiples of 100	[}			
	j. Any whole number is a	multiple of 1		[]	
18.	Use the given vocabula	ary to complete the followin	g.			
	(prime - factor - the n	number one - composite nur	mber - product -	multiples]		
	a. A is a number w	ith more than one set of fact	or pairs.			
	b. A is a number m	nultiplied by another number	to find a product.			
	c. Skip counting is a way	to find of a number.				
	d. is a factor of all r	numbers.				
	e. A number's only	factor pair is one and itself.				
	f. A is the answer to a multiplication problem.					

- 19 David has soccer practice every sixth day during June, beginning June 6. What are the dates of his other practices in June?
- 21. a. Doha and her little brother are laying out train tracks. Each train track is 12. centimeters long. How long are the first 5 pieces of track laid end to end?
 - b. How many pieces of track would Doha and her brother need to make the same distance from the previous problem if the track pieces were 4 centimeters long?
- Badr is buying kofta and aish baladi for his birthday party. The kofta is sold in packages of 3. The bakery sells the aish baladi in packages of 12. Badr wants to have exactly the same number of each. What is the minimum number of kofta and aish baladi he should buy?

Package	1		
Kofta	3		
	0		
Package	1		
Aish Baladi	12	,	

Hend and Jana are biking around a small lake. Hend makes a complete lap around the lake in 6 minutes. It takes her younger sister, Jana, 8 minutes to finish one lap. If Hend and Jana continue to bike around the lake at the same rate, how many minutes will it take for them to come together at the starting point again?

Lap	1	
Hend	6	
Lap	1	
Jana	0	

Multiple Chesico questions

Choose the correct answer.

1.	20	is a	mu	ltip	le of
of the last	20	10.00	1110	celle	100

A. 3

B. 6

C. 8

D. 10

- 2. Which of the following is a multiple of 5?
 - A. 23

B. 40

C. 51

D. 64

3. Which of the following is a multiple of 9?

A. 3

B. 45

C. 56

- D. 89
- 4. Which is NOT a multiple of 6?
 - A. 0

B. 30

C. 20

D. 42

5. Which of the following is NOT a multiple

- of 10?
 - A, 10

B. 20

C. 35

D. 50

- 6. Which is a common multiple of 5 and 8?
 - A. 20

B. 40

C. 35

D. 45

7. Which is NOT a common multiple of 9 and 6?

A. 18

B. 54

C. 36

D. 42

- 8. The common multiple for all numbers
 - is
 - **A.** 0

B. 1

C. 2

D, 4

9. The common multiples of 6 and 8 are the same as the multiples of which number?

A. 10

B. 12

C. 20

D. 48

10. The LCM of 6 and 10 is

- A. 60
- **B.** 30

C. 15

D. 45

11. The LCM of 5 and 6 is

A. 20

B. 24

C. 30

D. 40

12. What is the LCM of 8 and 18?

A. 8

B. 18

C. 24

D. 72

13. The LCM of 8,2 and 6 is

- **A**. 48 **C**. 80
- **B.** 45
- D. 24

14. The LCM of 5, 6 and 20 is

A. 30

B. 15

C. 60

D. 90

Lesson

Factors or Multiples ?



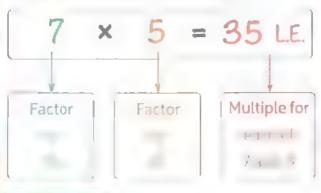
Relation between factors and multiples

Father, mother and three sons take the bus whose ticket is

7 L.E. per one.

What is the total cost of the family?

To find the total cost multiply 7 × 5





- The factors of 35 are 1, 5, 7 and 35
- 35 is a multiple of each of 1, 5, 7 and 35

7 and 35

35



Multiple of



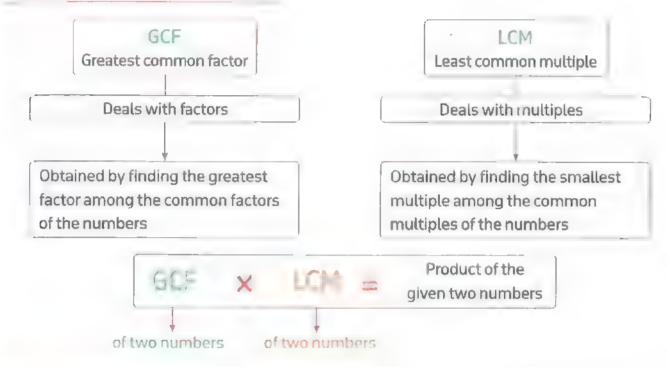
- is a factor of all numbers.
- Each number except zero has a finite number of factors.
- Any number is divisible by each of its factors.
- Factor of a number is smaller han or equal to this number.

- is a multiple of all numbers.
- Each number except zero has an infinite number of multiples.
- Multiple is the product of two factors or more.
- Non-zero multiple
 of a number is greater than or
 equal to this number.

Notes for parents:

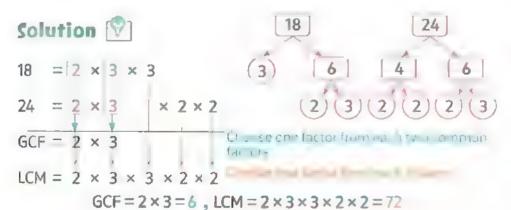
Ask your child to explain the difference between a factor and a multiple

Relation between GCF and LCM:



Example 1





Notice	C
2 4 × 1 8 1 9 2 2 4 0 4 3 2	7 2 × 6 4 3 2
GCF ×	
- Product	of the two
number	S



your understanding

Find GCF and LCM for each of the following.

a. 6 and 16

b. 14 and 21

Ask your child to explain the difference between GCF and LCM.

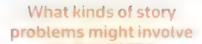
LEATH 2 GCF or LCM ... ?

To solve some story problems, you need to decide whether you have to find the GCF or LCM



problems might involve finding GCF?

These problems usually involve dividing, distributing equally, cutting into pieces or breaking something into groups.



These problems usually involve something repeated. multiple items, or when two things occur at the same time.



to :

Example 2

The dimensions of a room are 12 and 8 meters. A contractor wants to tile the room using the least number of squared tiles. What should the tile dimension be?

Solution [

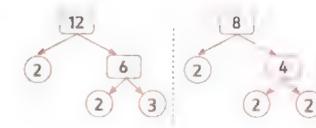


You will divide the room area into some squares, the least number of tiles is asked which means the dimensions of the tile must be the greatest possible that means you will find GCF of 12 and 8

$$12 = 2 \times 2 \times 3$$

$$8 = 2 \times 2 \times 2 \times 2$$

$$GCF = 2 \times 2 = 4$$



, then the tile has to be a square of side length 4 meters.

Example 3

Two neon signs are turned on at the same time. Both signs blink as they are turned on. One sign blinks every 9 seconds. The other sign blinks every 15 seconds. In how many seconds will they blink together again?

Notes for parents:

Ask your child when he/she decides to find GCF and LCM through the story problems.

Solution [97]



To find when the two signs blink together again at the same time, you have to find LCM of 9 and 15

$$9 = 3 \times 3$$
 $15 = 3 \times 5$
 $16M = 3 \times 3 \times 5 = 45$

, then the two signs will blink together again in 45 seconds.





your understanding

a. Farmer John and Farmer Jane are planning out their fruit orchard. Farmer John is planting the orange trees, and Farmer Jane is planting the cherry trees. Farmer John has 30 orange trees to plant, and Farmer Jane has 24 cherry trees to plant. They want to plant the trees so that each row has the same number of trees. What is the largest number of trees each row can have?

b. Two types of cubic stone blocks, one is of edge length 2 meters and the other is of edge length 3 meters. It is wanted to make a column from each type such that the two columns are of the same height using the least number of stones. What is the height of each column?

Ask your child to read each story problem and decide whether he/she have to find the GCF or the LCM to solve the problem.

Factors or Multiples?

on lesson 10

REPOSIONO CART PROBLEM SOLVING

From the school book

1. Find the GCF and LCM for each of the following numbers.

a. 12 and 16

12

16

LCM =

18 and 20

20

c. 24 and 36

24

36

2. Find the GCF and LCM for each of the following.

ŧ	Two numbers , the prime factors of the first are	3,3 and 5 and the prime factors of the
	second are 2,2,3 and 5, then:	<u></u>
	• The first number = —	• The second number = —
	• Their GCF =	• Their LCM =
4	4—Two numbers, one of them is 12, their GCF is 2 a	and their LCM is 60. Find the other number,
-0.0	Omnia has two strips of cloth. One is 35 centi She wants to cut both pieces into strips of equal wide should she cut the strips? Do you have to What is the answer?	l width that are as wide as possible. How
6.	6. Omar exercises every 12 days. Rana exercises together today. How many days will it be until the to find the GCF or the LCM? What is the answer	ney exercise together again? Do you have
7.	Menna is giving her friends pencils and speci of 8 and erasers in boxes of 10. If Menna wants the minimum number of pencils that she will have to the LCM? What is the answer?	ne same number of each, what is the

- 8. Nour is making snack bags for an upcoming trip. He has 6 oranges and 12 pieces of dried fruit. He wants the snack bags to be identical without any food left over. What is the greatest number of snack bags Nour can make? Do you have to find the GCF or the LCM? What is the answer?
- 9. Malak baked 30 servings of cakes and 48 servings of baklava for her family. She wants to divide the desserts into containers so that each person receives the same number of servings. How many containers will she need? Do you have to find the GCF or the LCM? What is the answer?
- 10. Ola sells baskets of figs that each hold 9. She also sells bags of pomegranates that each hold 7. If she sells the same number of each, what is the smallest quantity of each type of fruit that she sold ? Do you have to find the GCF or the LCM ? What is the answer?
- 11. Marwa waters one of her plants every 4 days and another plant every 6 days. If she waters both plants today, when is the next time both plants will be watered on the same day?
- 12. Sara has 16 red flowers and 24 yellow flowers. She wants to make bouquets with the same number of each color flower in each bouquet. What is the greatest number of bouquets she can make?

Challenge

13. If the LCM of two numbers is 36 and their GCF is 3, what could be these two numbers?

Unit Two Assessment



1. Choose the correct answer.

- **a.** If k = 3.551 = 1.268, then k =
 - A. 2.283
- B. 4.819
- C. 3.514
- D. 5.103

b. The perimeter of the opposite figure is 12.539 cm,

then x = ____ cm.

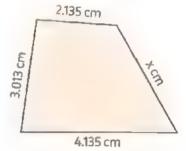
- A. 4.012
- C. 3.256

- B. 3.317
- D. 4.216
- c. Prime factorization of 12 is ——
 - A. 1,2,3,4,6,12
 - C. 2×2×3

:h

e

- B. 2×2×2×3
- D. 2×3×4



- d. Adel and Hany have 36 L.E. together, Adel only has 20 L.E., then the variable x in the equation x + 20 = 36 represents
 - A. Adel money.
- B. Hany and Adel money.
- C. Hany money.
- D. the difference between Adel and Hany money.
- e. Which pair of numbers has the same greatest common factor as 24 and 18?
 - A. 12 and 24
- **B.** 30 and 12
- C. 36 and 18
- **D.** 42 and 35

- f. The number 13 has factors.
 - **A.** 3

- B. 5
- C. 2

D. 1

2. Complete.

- a. Ramy carries 7.136 kg of apples and oranges where oranges weight is 3.816 kg, then the equation representing the weight of apples only is
- b. The number whose prime factors are 2,2,3,5 is
- c. If 4.563 + 2.45 = k + 3.265, then k = _____
- d. GCF of any two prime numbers is
- e. The prime numbers between 20 and 30 are ————
- f. The multiples of 4 which lie between 21 and 35 are



3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. LCM of two different numbers is greater than their GCF

b. 2.568 + x = 3.8 is an equation.

c. 2 is a multiple for any even number.

d. 8 is a common multiple of 2 and 4

e. The GCF of 36 and 12 is 6

f. If the GCF of two numbers is 6 and their LCM is 12, then the product of the two numbers is 72

4. Match.

a.

Prime factors of 12 are

0,6,12,18,24 and 30

b.

Factors of 18 are

1,2,3,6,9 and 18

C.

Multiples of 6 up to 30 are

2,3,5 and 7

Prime numbers lying between 1 and 10

- 2,2 and 3
- 5. A school has a case of 144 candy bars and a case of 24 sodas. If these are divided evenly among the students, how many students will get candy and soda? How many candy bars and sodas will each student get?
- 6. A mother has 1.352 kg of flour. She wants to make a cake for her children. If the cake needs 2 kg of flour, how many more flour does she need?

Thomas | Number Steam and Spannian

13

Multiplication with Whole Numbers

- Fernand V / III / II



Concept

Models for Multiplication



	Lesson Name	Learning Objectives	
Lesson 1	The Power of Ten	 Students will identify powers of ten. Students will multiply single digits by powers of ten. Students can explain the patterns they observe when multiplying by powers of te 	
	Using the Area Model to Multiply	Students will multiply using the area model.	
Lessons 2&3	The Distributive Property of Multiplication	Students will explain the relationship between the area model of multiplication and the Distributive Property of Multiplication.	
Lesson 4	Using the Partial Products Model to Multiply	Students will multiply using the partial products model. Students will estimate products.	

The Power of Ten



Maged decided to save money each day.

He saves 5 pounds per day.

Calculate the total savings after 100 days.

ou car			ic fac	1	
TH	Н	Т	0		
			5	5×1=5	
		5	0	5×10=50	[Put 1 zero at the end]
	5	0	0	5 × 100 = 500	[Put 2 zeroes at the end]

So, Maged saved 500 pounds in 100 days.

0

Example 1

5 , 0

Use basic facts and patterns to find each product.

$$3 \times 100 = 1$$

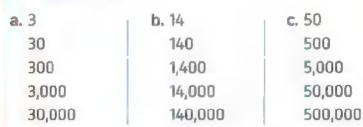
c.
$$50 \times 1 =$$

 $5 \times 1,000 = 5,000$ [Put 3 zeroes at the end]

Look for a pattern of zeroes.

$$50 \times 10,000 =$$

Solution [



MATH IDEA

The product has the same number of zeroes as the factor unless the basic fact has a zero in the product.

Notes for parents:

Help your child discover the pattern of zeroes when multiplying by powers of ten.

Example 2

Fill in the blanks below.

e.
$$\times 13 = 1,300$$

Solution [

a.
$$4 \times 100 = 00$$

c.
$$10,000 \times 7 = 0000$$

To be a second

- Powers of ten are different than multiples of ten.
 - Examples of powers of ten:
 10,100,1,000,10,000,...
- Examples of multiples of ten: 10,20,30,70,100,500,8,000
- All powers of ten are multiples of ten, but **NOT** all multiples of ten are powers of ten.

For Example:

- 1,000 is both a power of ten and a multiple of ten.
- 20 is a multiple of ten but NOT a power of ten.

10 march 1

your understanding

Complete each of the following.

c.
$$70 \times 10,000 = 1$$

5

Th

Ar

- R

$$\times 100 = 2,000$$

Remember

$$-1 \text{ kg} = 1,000 \text{ g}$$

Notes for parents:

 Explain that when mult plying by a power of ten the product has the same number of zeroes unless the basic fact has a zero.

Example 3.

Fill in the blanks below.

$$a, 5 cm = mm$$

Solution [8]

a.
$$5 \text{ cm} = 5 \times 10 = 50 \text{ mm}$$

b.
$$2 \text{ kg} = 2 \times 1.0.10 = 2,000 \text{ g}$$

c.
$$7 L = 7 \times 1,000 = 7,000 \text{ mL}$$

d.
$$6 \text{ m} = 6 \times 100 = 600 \text{ cm}$$

e.
$$10 \text{ km} = 10 \times 1,000 = 10,000 \text{ m}$$

f. 9 kilometers =
$$9 \times = 9,000 \text{ meters} = 9,000 \times = 900,000 \text{ cm}$$

Example 4

Mark drinks 3 liters of water each day.

How many milliliters does Mark drink each day?

Solution [9]



There are 1,000 milliliters in 1 liter [1,000 ml so, multiply by 1,000] Mark drinks $= 3 \times 1,000 = 3,000$ milliliters



Example 5

Amany bought 5 meters of cloth to make a new dress.

How many centimeters did Amany buy?

Solution T



There are 100 centimeters in 1 meter [1 meter = 100 centimeters so, multiply by 100] Amany bought = $5 \times 100 = 500$ centimeters



Ali used 2 kilograms of flour in a recipe for food. How many grams of flour did Ali use in the recipe?

Remind your child how he/she changes units in metric system.

on lesson 1

REMEMBER



From the school book

1. Use basic facts and patterns to find each product.

Find each product of the following.

a.
$$3 \times 10 =$$

c.
$$1,000 \times 6 =$$

e.
$$2 \times 100,000 =$$

$$g. 10 \times 18 =$$

$$k. 100 \times 12 =$$

$$m. 15 \times 100,000 =$$

f.
$$10,000 \times 5 =$$

h.
$$30 \times 100 =$$

j.
$$70 \times 10,000 =$$

Jumping by powers of Ten. Solve.

a.
$$= 8,000$$

$$= 8.000$$

c. —
$$\times 7 = 70$$

f.
$$\times 5 = 500$$

h.
$$\square 2 \times = 200,000$$

4. Writing Expressions. Write an expression to complete each equation using powers of ten for each given number.

$$a. 30 =$$

- Write an expression for each number of the following using powers of ten.
 - a. 15,000
- b. 90

- c. 400,000
- d. 700

- e. 50,000
- f. 1,000

- **g.** 1,300
- h. 180,000
- Makching Expressions Choose from the given expressions to enter the one that is equal to the number.

- a. 50,000
- b. 500——
- c. 5,000 ---
- d. 50
- e. 500,000
- 7. Match the equal products.
 - a. 3×1,000
 - 0
 - b. 3×100,000
 - c. 3×10
 - d. 3 × 10,000
 - e. 3×100

- 30 × 10
- 30 × 1,000
- 30×100
- 30 × 10,000
- 9 30×1

- 8. Fill in the blanks below.
 - a. 7 cm = mm
 - c, 8L= mL
 - e. 5 kg = _____
 - g. 7 km = ____ cm

- b. 3 km = ____ m
- d. 9 m = --- cm
- f. 20 L= mL
- h. 50 m = ___ mm

9. (Multipl	ying	by	powers	of T	en	Solve the	following	problems.
------	---------	------	----	--------	------	----	-----------	-----------	-----------

- a. Amir put 2 sandwiches in one bag. How many sandwiches are there in 100 bags?
- **b.** A crate of mangoes weighs 9 kilograms. How many kilograms would 1,000 crates weigh?
- c. In an event organization, each table has 4 chairs. How many chairs are there in 10 tables?
- d. If 10 millimeters makes 1 centimeter, how many millimeters are in 7 centimeters?
- e. How many grams are in 5 kilograms?
- f. There are 1,000 milliliters in 1 liter. Omar bought a 2-liter bottle of juice. How many milliliters are in the bottle?
- **g.** Aya ran a 5-kilometer race on Saturday. If there are 1,000 meters in 1 kilometer, how many meters did she run?

10. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. $100 \times 5 = 500$

b. $40 \times 10,000 = 40,000$

11

c. $1.000 \times 3 = 3.000$

d. $12 \times 100 = 12,000$

l

e. 9 kg ⁻ 900 g

f. 14,000 mL = 14 L

l

g. There are 600 meters in 6 kilometers.

.

h. There are 9,000 milliliters in 9 liters.

i. There are 30,000 grams in 3 kilograms.

[]

11. Writing About Math Explain the difference between powers of ten and multiples of ten. Use examples to support your thinking.

12. Writing About Math. What is the Error?

Rana says that: $90 \times 1,000 = 900,000$

Describe her error. Write the correct answer.



Choose the correct answer.

$$2.7 \times 100 =$$

C. 500

C. 1,000

6.
$$\times 3 = 30,000$$

7.
$$8 \times 10 =$$

8.
$$= 100,000 \times 6$$

D. 80,000

C.
$$4 \times 1,000$$

10. 150,000 =

C.
$$15 \times 10,000$$

mL

12. 5L=

C. 4,000

D. 40,000

15. There are

meters in 5 kilometers.

- Using the Area Model to Multiply
- The Distributive Property of Multiplication



Lumm 1 Using the area model to multiply

A toys factory produces 193 boxes of toys per day. There are 24 toys in each box.

Calculate the total number of toys per day.

Multiply: 193 × 24

You can use the area model as follows:

Expand: 193 = 100 + 90 + 3 and **Expand**: 24 = 20 + 4



		193			
		•			
		100	90	3	
1	÷ 20	20 × 100 - 2,000	20 × 90 = 1,800	20 × 3 = 60	
2	× 4	4 × 100 = 400	4 × 90 = 360	4 × 3 = 12	

		2,	0	0	0
	+	1,	8	0	0
	+			6	0
	+		4	0	0
ĺ	+		3	6	0
	+			1	2
		4	6	3	2

Ē, Us

Re

561

Add the products:

 $193 \times 24 = 2,000 + 1,800 + 60 + 400 + 360 + 12 = 4,632$

So, the factory produces 4,632 toys per day.

Notice that

When adding the products, order of products does not affect the total answer.

Example

Use the area model to solve the following.

a. 409×68

b. 1.738 × 54

Solution [V]

b. •
$$1,738 = 1,000 + 700 + 30 + 8$$

• $54 = 50 + 4$

1000 700

	400	4
60	60 × 400 = 24,000	6(× 9 = 540
8	8 × 4(1() = 3,200	8 × 9 = 72

	11000		43.0	
56	(1) × 1000	50 × 700	50 × 30	50 × 8
ال	= 50,000	= 35,000	= 1,500	= 400
4	4 × 1,000	4 × 7(10	4 × 10	4 × 8
	= 4,000	= 2,800	= 120	= 32

$$1,738 \times 54 = 50,000 + 35,000 + 1,500 + 400$$

 $1 + 4,000 + 2,800 + 120 + 32 = 93,852$

Notes for parents:

· While there are many ways to decompose a number, numbers should be decomposed using place value when using an area model for multiplication. For example, it is possible to decompose 23 in many different ways, including 17 and 6 , 10 and 13, or 14 and 9. However, 23 should be decomposed into 20 and 3 when using an area model for multiplication.



The Distributive Property of Multiplication

The Distributive Property states that multiplying a sum by a number is the same as multiplying each addend by that number and adding the products.

For Lxample

To find 7×14 using the Distributive Property.

• Break apart 14 into (10 + 4).

$$7 \times (10 + 4) = (7 \times 10) + (7 \times 4)$$

= $7 \times (10 + 2) = 70$

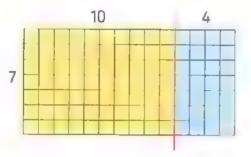
• By using the area model.



7 × 14 = 98



14 can be broken apart in many ways such as: [7+7], [6+8], [5+9]....





Example 2

Use the Distributive Property to find the following products. Try to find another way to break apart. Represent the problem using an area model.

b.
$$18 \times 304$$

Solution [?

- a. Break apart 46 into 40 + 6
 - Break apart 27 into 20 + 7

	20	7
40	40 × 20 = 800	40 × 7 = 280
6	6 × 20 = 120	6 × 7 = 42

$$[40+6] \times [20+7] = [40 \times 20] + [40 \times 7] + [6 \times 20] + [6 \times 7]$$

$$= 800 + 280 + 120 + 42$$

$$= 1.242$$

- b. Break apart 18 into 10 + 8
 - Break apart 304 into 300 + 4

	300	4
10	10 × 300 = 3,000	10 × 4 = 40
8	$8 \times 300 = 2,400$	8 × 4 = 32

$$(10+8) \times (300+4) = (10 \times 300) + (10 \times 4) + (8 \times 300) + (8 \times 4)$$

= 3,000 + 40 + 2,400 + 32
= 5,472

Your child may incorrectly decompose that factors according to their digits rather than according to the
values of their digits. He/She may decompose 14 as 1 and 4 rather than 10 and 4.

• Break apart 245 into 200 + 40 + 5

200 40 5 11 × 11 × 1200 = 150 9 9 × 200 9 × 40 9 × 5 = 1,800 = 360 = 45

$$[30+9] \times [200+40+5] = [30 \times 200] + [30 \times 40]$$

$$= 1,800 = 360$$

$$+ [30 \times 5] + [9 \times 200] + [9 \times 40] + [9 \times 5]$$

$$= 6,000 + 1,200 + 150 + 1,800 + 360 + 45$$

$$= 9.555$$

Example 3

Access AMIL

Use the following area models to write the distribution equations.

a.

	20	7
9	180	63

b.

	40	8
70	2,800	560
3	120	24

C.

	100	2
50	5,000	100
3	300	6
L		1

d.

	600	30	1
30	18,000	900	30
4	2,400	120	4

Solution [

a.
$$9 \times 27 = [9 \times 20] + [9 \times 7] = 180 + 63 = 243$$

b.
$$73 \times 48 = [70 \times 40] + [70 \times 8] + [3 \times 40] + [3 \times 8]$$

= 2,800 + 560 + 120 + 24 = 3,504

c.
$$53 \times 102 = (50 \times 100) + (50 \times 2) + (3 \times 100) + (3 \times 2)$$

= 5,000 + 100 + 300 + 6 = 5,406

d.
$$34 \times 631 = [30 \times 600] + [30 \times 30] + [30 \times 1] + [4 \times 600] + [4 \times 30] + [4 \times 1]$$

= $18,000 + 900 + 30 + 2,400 + 120 + 4 = 21,454$



Notes for parents:

[•] Your child get confused with now many zeroes to place at the end of a produc. For example, your child may write $7 \times 2,000 = 1,400$ instead of $7 \times 2,000 = 14,000$. Your child may also write $5 \times 200 = 100$ instead of $5 \times 200 = 1,000$.

Example 4

Find more ways to find the product of 32 × 48 using the Distributive Property and area model.

Solution []

Know that: All the ways show the same product.

- First way: Break apart 32 into 30 + 2
 - Break apart 48 into 40 + 8

$$[30 + 2] \times [40 + 8]$$

$$= (30 \times 40) + (30 \times 8) + (2 \times 40) + (2 \times 8)$$

$$=$$
 1,200 + 240 + 80 + 16 $=$ 1,536

- Second way:

 Break apart 32 into 20 + 10 + 2
 - Break apart 48 into 40 + 8

$$[20 + 10 + 2] \times [40 + 8]$$

$$= [20 \times 40] + [20 \times 8] + [10 \times 40]$$

$$+[10 \times 8] + [2 \times 40] + [2 \times 8]$$

$$= 800 + 160 + 400 + 80 + 80 + 16 = 1,536$$

- Third way: Break apart 32 into 30 + 2
 - Break apart 48 into 20 + 20 + 8

$$[30+2] \times [20+20+8]$$

$$= [30 \times 20] + [30 \times 20] + [30 \times 8]$$

$$+[2 \times 20] + [2 \times 20] + [2 \times 8]$$

$$=600+600+240+40+40+16=1.536$$

	40	8		
30	$200 \times 10 = 1,200$	30 × 1 = 240		
	′× 1 – 80	2 × 116		

	40	8
1	× · (= 800	× = 160
H	× ; 1 = 400	10 × = 80
2	2 × 40 = 80	2 × 8 = 16

	20	20	8
ľ	' × T	3(× 2 ,	30 × E
	= 600	- 600	- 240
2	2 × 20	2 × 20	2 × 8
4	= 40	= 40	= 16

Try to find another ways as: • Break apart 32 into 10 + 11 + 11
• Break apart 48 into 20 + 20 + 8



your understanding

- 1. Solve each of the following problems using an area model.
 - **a.** 618×43

- **b.** 82 × 306
- 2. Use the Distributive Property and area model to find each of the following products.
 - a. 26 × 42

b. 34 × 629

[•] Ask your child to find more ways to find the product of 32 × 48.

Executer

on lessons 2&3

- Union (I'm Army Health to Hultiply)
- · The Districution Property of M. Highrotion

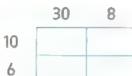
PEMEMBER



From the school book

1

Complete each of the following area models.



b.

300

60

100

5

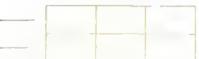
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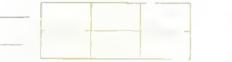
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Expanding Equations. Create an area model for each of the following problems and find each product.

a.
$$21 \times 64 =$$

b.
$$103 \times 72 =$$







f.
$$2,721 \times 56 = -$$

-7	Colve	oach	OF	tho	Following	nrahlame	ucina	212	2502	model
	Sowe	each	OT	trie	Touowing	problems	using	dFI	area	model

a.
$$12 \times 25 =$$

$$_{\rm J}$$
, $_{\rm A}$, $_{\rm J}$, 3,352 × 17 =

4 Use the Distributive Property of Multiplication and area model to find the product of each of the following.

a.
$$14 \times 27 =$$

$$[10 \times 20] + [10 \times] + [\times 20] + [4 \times] =$$

b.
$$11.58 \times 42 =$$

$$[40 \times] + [40 \times 8] + [\times 50] + [2 \times] =$$

	_	50	8
40		2,000	320

$$[10 \times] + [\times 2] + [\times 60] + [9 \times] =$$

2 | 100 |

d.
$$(20 \times 30) + (\times) + (\times) + (4 \times 7) =$$

5. Complete the area model and evaluate.

a.
$$(50 \times 30) + (50 \times 4) + (7 \times 30) + (7 \times 4) =$$

b.
$$[40 \times 40] + [40 \times 8] + [9 \times 40] + [9 \times 8] =$$

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Decompose with Area Model. Eman is planting a garden. She wants to find the area of the garden to know how much topsoil she will need. The garden is 46 meters long and 24 meters wide. How many different ways can you decompose the numbers to help her find the area?



a. Mrs. Mona asked her class to find the product 83 × 14. Here are three ways students thought about the problem. Record their work in an area model and evaluate.
Remember the addends on each side must equal 83 and 14 respectively.

Mazen:
$$(40 \times 10) + (40 \times 10) + (40 \times 4) + (40 \times 4) + (3 \times 10) + (3 \times 4)$$



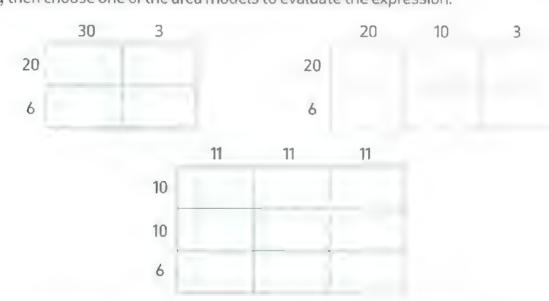
Lamiaa:
$$[80 \times 7] + [80 \times 7] + [3 \times 7] + [3 \times 7]$$



Reeda:
$$(80 \times 10) + (80 \times 4) + (3 \times 10) + (3 \times 4)$$



b. Mrs. Mona then asked her class to evaluate 33 × 26. Here are three ways students thought about the problem using an area model. Write an expression for each model. , then choose one of the area models to evaluate the expression.



c. Mrs. Mona would like you to solve a problem. Create an area model and evaluate: 42 × 34 =

Solve the problems. Use an area model other than expanded form. Do not just break it down with place value.

a.
$$17 \times 32 =$$

b.
$$42 \times 28 =$$

c. 1.3
$$36 \times 62 =$$

Ways may vary

f.
$$306 \times 25 =$$

h.
$$= 210 \times 79 =$$

i.
$$117 \times 30 =$$

9 Use the Distributive Property to solve each problem as in the example.

Example:
$$23 \times 154 = (20 + 3) \times (100 + 50 + 4)$$

= $(20 \times 100) + (20 \times 50) + (20 \times 4)$
+ $(3 \times 100) + (3 \times 50) + (3 \times 4)$
= $2,000 + 1,000 + 80 + 300 + 150 + 12$
= $3,542$

a.
$$7 \times 45 =$$

g.
$$53 \times 246 =$$

b.
$$2 \times 98 =$$

e.
$$24 \times 107 =$$

h.
$$9 \times 3{,}123 =$$

$$c. 13 \times 66 = -$$

1.
$$73 \times 6,874 =$$

- Ali walks 6 kilometers each day. If he walked 187 days a year
 - , how many kilometers would he walk?
- 11. Mhat if Ali were to drive 60 kilometers each day?
 How many kilometers would he drive in 187 days?
- 12. Mina runs 14 hours every week.
 What is the number of running hours in 52 weeks?
- 13. Sara bought 36 boxes of juice for 125 L.E. each.

 How much money did Sara pay in all?
- 14. Eslam ordered 387 books for his library. Each book costs 46 L.E. How much money did Eslam pay in all?

15 Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a.
$$31 \times 54 = [30 \times 50] + [30 \times 4] + [1 \times 50] + [1 \times 4]$$

b.
$$27 \times 148 = [70 \times 100] + [70 \times 40] + [70 \times 8] + [2 \times 100] + [2 \times 40] + [2 \times 8]$$

.

d.
$$56 \times 440 = [50 + 6] + [400 \times 4]$$

c. $19 \times 702 = [19 \times 700] + [19 \times 2]$

.

e.
$$42 \times 236 = 9,912$$

f.
$$3,127 \times 13 = (10 + 10 + 3) \times (3,000 + 100 + 20 + 7)$$

[

16. Complete.

a.
$$15 \times 46 = [10 \times ---] + [10 \times 6] + [5 \times 40] + [\times 6]$$

b.
$$328 \times 67 = [300 + +8] \times [30 + ---+7]$$

c.
$$253 \times = [70 \times 200] + [70 \times 50] + [70 \times 3] + [4 \times 200] + [4 \times 50] + [4 \times 3]$$

d.
$$63 \times 1,905 = [60 \times] + [60 \times] + [60 \times] + [3 \times] + [3 \times] + [3 \times]$$

f.
$$38 \times 14 = [30 \times] + [30 \times 7] + [8 \times] + [8 \times]$$

17. Error Analysis: Read the problem and complete the error analysis.

Badir thinks $206 \times 45 = 11,700$. Identify what Badir did correctly and incorrectly and then solve the problem.

	200	60	0	8,000
40	8,000	2,400	0	+ 1, 0 0 0
	•			+ 2, 4 0 0
5	1,000	300	0	+ 300
	*			11, 7 0 0

- 1. What did the student do correctly?
- 2. What did the student do incorrectly? Why do you think he made this error?
- 3. Try to solve the problem correctly. Explain your thinking.

18. L. Math around Egypt : The Fennec Fox

Work with your teacher to read the passage. Then , use a model to solve the problem. The mountains of the Eastern Desert are excellent desert habitats for small mammals like the fennec fox. These foxes are small and have adapted to the harsh desert environment by having large ears to help cool them down.



Fennec Fox

When a fennec fox builds a den, it can have up to 15 different entrances.

How many entrances could 32 dens have?

19. L. Math around Egypt : Red Sea Hills Range

Work with your teacher to read the passage.

, then answer the question. Within the Eastern Desert is a mountain range that runs parallel to the Red Sea coast. Mountain heights in this range are between 1,700 and 2,000 meters. Omar owns a travel company that takes visitors throughout the mountains of the Eastern Desert. He has 12 buses. Each bus can hold 25 passengers.



Eastern Desert

How many passengers can Omar take each day if every bus is full?



Multiple Choice Questions

Choose the correct answer.

What is the unknown value in the area model of 53 × 795?

$$85 \times 69 = [80 \times 60] + [80 \times 9] + [5 \times 9] + [$$

5. 24 × 136 _

B.
$$5 \times 60$$

C.
$$50 \times 6$$

D.
$$50 \times 60$$

A.
$$(20 \times 100) + (20 \times 3) + (20 \times 6) + (4 \times 100) + (4 \times 30) + (4 \times 6)$$

B.
$$[20 \times 100] + [20 \times 30] + [20 \times 6] + [4 \times 100] + [4 \times 30] + [4 \times 6]$$

C.
$$[4 \times 1] + [4 \times 3] + [4 \times 6] + [2 \times 1] + [2 \times 3] + [2 \times 6]$$

D.
$$(2 \times 100) + (2 \times 30) + (2 \times 6)$$

+ $(4 \times 100) + (4 \times 30) + (4 \times 6)$

$$[100 + 100 + 70 + 4] \times [6 + 80] -$$

$$= (50 \times 600) + (50 \times 30) + (50 \times 1) + (3 \times 600) + (3 \times 30) + (3 \times 1)$$

A.
$$536 \times 51$$

A.
$$(70 \times 40) + (70 \times 2) + (3 \times 40) + (3 \times 2)$$

B.
$$[70 \times 10] + [70 \times 10] + [70 \times 4] + [3 \times 10] + [3 \times 10] + [3 \times 4]$$

C.
$$(70 \times 20) + (70 \times 20) + (3 \times 20) + (3 \times 20)$$

D.
$$[7 \times 20] + [7 \times 4] + [30 \times 20] + [30 \times 4]$$

- A merchant bought 136 boxes of juice for 25 pounds each. How much money did he pay?
 - A. 3,400 L.E.
- B. 3,170 L.E.
- **C.** 3,200 L.E.
- **D.** 3,236 L.E.
- 8 38 × 564 =
 - A. 20,532
 - B. 21,433
 - C. 21,432
 - **D.** 20,332



Using the Furtial Fraducis Model to Multiply

Leam

Partial products

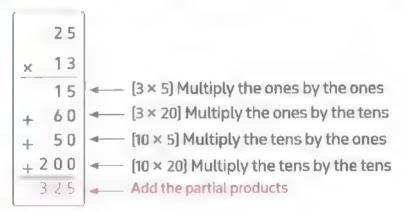
A group of 25 students, each one jumped rope for 13 minutes.

How many minutes in all did they jump rope?

Multiply: 25×13

You can use partial products as follows.





So, the number of minutes in all is 325.

Example 1

Find the product by partial products.

Solution [

a

Notes for parents:

- In this lesson, your child will apply to use the partial products model to multiply.
- Your child may have difficulty decomposing numbers when a problem is written vertically.



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Example 2

Estimate to find the product by using front end strategy, then solve using partial products.

a.
$$35 \times 42$$

Solution [

a. Estimate:
$$30 \times 40 = 1,200$$

3 5

The estimation is reasonable

b. Estimate:
$$500 \times 70 = 35,000$$

The estimation is reasonable



your understanding

Find the product using the partial products.



Remind your child that he/she has been learning different strategies for multiplication.

on lesson 4

REMEMBER



ROBLEM SOLVING

: From the school book

1. Solve using the partial products.

a.

b. 🔞

C.

d. [[]]

e

f.

g. 1, 762 × 56

h.

i.

4,790

2. Put (/) for the correct statement and (X) for the incorrect statement.

a.
$$54 \times 12 = 548$$

b.
$$37 \times 18 = 666$$

ſ

c.
$$62 \times 71 = [2 \times 1] + [2 \times 70] + [60 \times 1] + [60 \times 70]$$

]

d. $93 \times 18 = [90 \times 1] + [90 \times 8] + [3 \times 8] + [3 \times 1]$

e. 45 × 23 > 800

- [f. 391 × 11 = 431

3. Match.

 23×51

 $[2 \times 1] + [2 \times 50] + [30 \times 1] + [30 \times 50]$

 23×15

 $(3 \times 1) + (3 \times 50) + (20 \times 1) + (20 \times 50)$

 32×51

 $(3 \times 5) + (3 \times 10) + (20 \times 5) + (20 \times 10)$

d. 32×15

- $[30 \times 10] + [30 \times 5] + [2 \times 10] + [2 \times 5]$
- 4. Estimate to find the product by using front end strategy, then solve using partial products.
 - a. 72 × 31

b. 527×23



- c. 169×71

d. $8,461 \times 25$



f. 92 × 9,120

5. Petra ordered 167 binders for her office. Each binder costs 21 L.E.

How much did the binders cost in all?

(Use the partial products strategy to solve).



6. (Li) There are 18 hotels in a resort city. If each hotel has 135 guests, how many guests are staying in the city?

(Use the partial products strategy to solve).



7. Ahmed bought 27 boxes of juice for 117 L.E. each.

How much money did Ahmed pay ?



Challenge

- 8. The length of one Earth day is86,400 seconds, or 24 hours.
 - a. How many Earth hours long is a day on Mercury? on Venus?
 - b. How many Earth minutes long is a Pluto day?



Planet	Approximate Length of Day
Mercury	59 Earth day
Venus	243 Earth day
Pluto	6 Earth day

Choose the correct answer.

- A. 670
- C. 333
- B. 616
- D. 666
- 524
 - A. 6,768
 - C. 2,620
- **B.** 16,768
- D. 16,668

- to -
- A. 4,000
- B. 40,000
- C. 400
- D. 40

- A. 15
- C. 1,500
- B. 150
- D. 35

5. Which partial products can be used to solve 37 × 61?

- A. $[7 \times 1] + [7 \times 60] + [30 \times 1] + [30 \times 60]$
- **B.** $[7 \times 1] \times [7 \times 60] \times [30 \times 1] \times [30 \times 60]$
- C. $[7 \times 1] + [7 \times 6] + [3 \times 1] + [3 \times 6]$
- D. $[60 \times 30] + [60 \times 7] + [1 \times 7] + [1 \times 3]$

6 What is the ones digit of the product of 752 × 37 without solving the whole problem?

B. 4

C. 5

D. 6

- A. 54×342
- C. 61 × 218
- B. 36 × 153
- D. 32 × 372
- 8. 5.621 × 36 =
 - A. 22,356
 - C. 189,256
- **B**, 202,356 D. 46,489



Multiplying 4-Digit Numbers by 2-Digit Numbers



Blue whale is the largest animal to have ever-lived on Earth, blue whale can grow

35(0) (20)

three lorries of 44,000 kg. How much does a blue whale weigh?

		() ————————————————————————————————————
	What is an Algorithm?	Students will multiply using the standard algorithm
Lessons 5&6	Multiplying Multi-Digit Numbers	Students will multiply 4-digit numbers by 2-digit numbers using the standard algorithm Students will use estimation to check the reasonableness of their answers.
Lesson 7	Multiplication Problems in the Real World	• Students will solve multistep story problems involving multiplication.





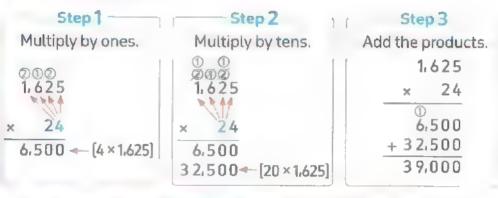
What is an Algorithm 7.

" Multiplying Fully-Digit Humbers

Multiplying numbers using standard algorithm

An an mator creates 24 pictures for each second of an animated cartoon. How many pictures are drawn to make a cartoon that is 1,625 seconds long?

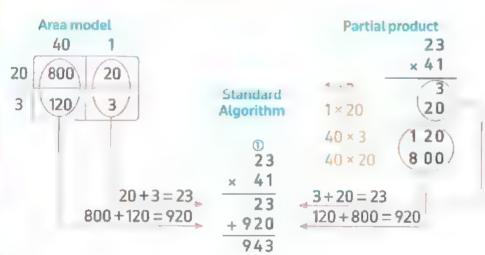
Multiply: 1,625 × 24



So, the animator creates 59,00 pictures to make a 1,625-seconds cartoon.

The relation between area model, part aliptodiction detailed standard algorithm for multiplication:

For Example: Multiply: 23 × 41



The three strategies give the same result but standard algorithm is the most efficient.

Notes for parents:

Your child sometimes has difficulty demonstrating proper regrouping when
using the standard algorithm for multiplication. He/She may omit writing the
digit above the correct place or he/she may attempt to place two digits at a
time in the product.

Estimating products

You will learn how to use rounding to estimate product.

Example

A merchant has 127 boxes of pens. Each hold 36 pens.

About how many pens does the merchant have?





Round to greatest place value

The actual product

[using standard multiplication strategy]

Since 4,572 is close to 4,000 the answer is reasonable.



your understanding

- 1. Use standard algorithm strategy to find the result.
- a. 35 × 862

b. 74 × 5.641

 $c. 2.504 \times 16$

- 2. Solve the following. First by estimate by round to the greatest place value, second use standard algorithm to find the actual product.
- a. 872 × 23

b. 3.254 × 49

Estimate: -

Estimate:

Actual product: -

Actual product:

Notes for parents:

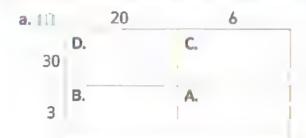
· Remind your child that although he/she has been learning different strategies for multiplication, mathematicians work towards being efficient in their calculations. It might take a long time to draw an area model to so ve a problem, so they may choose to use an algorithm like partial products or the standard algorithm.

REMEMBER

11-	Adapted to	
6	GA19893111	

From the school book

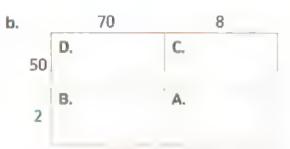
1. Fill in the area model starting at letter A.



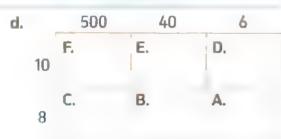
Final product: ----

c.		300	60	7	
	20	F.	E.	D.	
	9	C.	В.	A.	

Final product:



Final product:



Final product:

Record the partial products in the order listed.

Final product:

Final product: ——

Final product:



3. Find the result using standard algorithm.

a. 26 ×33

-

- b. 78 × 52
- c. 367 × 29
- d. 546 × 18

4. Fill in the area model. Then, explain which parts of the area model and the standard algorithm match.

20

4

7 6 × 2 4 3 0 4 + 1, 5 2 0

5. Determine the values of the missing digits and then find the final product.

a. 📖

b.

C.

5 6 3 × 2 4 2 2 5 + 1 2 0

6. Find the result.

a.
$$7 \times 134$$

d. 🕮 76 × 82

g. 867 × 64

j. 51 × 9,037

m. 9,984 × 27

b. $3 \times 5,672$

e. 18 × 107

h. 13 × 1,025

k. 70 × 8,617

n. 7,892 × 34

c. $6 \times 3,407$

f. (234 × 53

i. $47 \times 8,640$

L. 2,987 × 66

o. 98 × 6,754



Solve the following. First by estimate by round to the greatest place value, second use standard algorithm to find the actual product.

b.

- a. Estimate

 8 8 8 →

 × 2 9 →
- Estimate c.
 7 2 1 → × 7 4 → -

× 18→

- 8. Estimate the product.
 - a. 416×72

b. 871 × 27

c. 586×69

d. 490×71

e. 817 × 34

- f. 999 × 94
- 9 Put (\checkmark) to the correct statement and (X) to the incorrect statement.
 - a. $23 \times 14 = 312$

- **b.** 72 × 861 = 61,892
- []

- **c.** $17 \times 8,562 = 145,554$
- **d.** 23 × 7,093 = 163,139
- []

- **e.** 27 × 2,404 = 62,888
-] | f. 72 × 5,621 = 404,712
- []
- Akram says that 34×69 will give you the same product as $[34 \times 70] = 34$ Do you agree or disagree? Why?
- 11. Circle the problem that has the greatest product.

12 Circle the problem that has the smallest product.

- 13. Match the Model Solve each problem. First, estimate and record your estimate.

 Then, solve using the multiplication algorithm. Finally, record the letter of the matching model.
 - 1. 3,567 × 24

My Estimate: ----

Evaluate: 3,567 × 24 = _______

Matching Model Letter: ----

3. B,222 × 53

My Estimate:

Evaluate: 8,222 × 53 =

Matching Model Letter: -

2. 2,521 × 74

My Estimate:

Evaluate: 2,521 × 74 = -

Matching Model Letter: ----

4. 6,209 × 33

My Estimate: — —

Evaluate: 6,209 × 33 = _____

Matching Model Letter:

Match the Model

A.	3,000	500	60	7
20	60,000	10,000	1,200	140
4	12,000	2,000	240	28

В.				6,	2	0	9
	×					3	3
			1	0	0	2 6	7 0
			1	8,	0	7	0
	+	1	8	0,	6	0	0

C.				6,	2	0	9
	×					3	3
						2	7
					6	0	0
			1	8,	0 2	0	0
					2	7	0
				6,	U	U	0
	+	1	8	0,	0	0	0

D.	8,000	200	20	2
50	400,000	10,000	1,000	100
3	24,000	600	60	6

E.	8,000	200	20	2
5	400,000	1,000	100	10
4	24,000	600	60	6

F.	2,000	500	20	1
70	140,000	35,000	1,400	70
4	8,000	2,000	80	4

Choose the correct answer.

- A. 6,188
- B. 6,198

C. 6,498

D. 5,498

- A. 188,025
- **B.** 177,005
- **C.** 175,705

D. 189,025

A. >

B. <

C. =

4. What is the Ones digit in the product of
$$37 \times 124$$
?

A. 2

B. 3

C. 6

D. 8

- A. $24 \times 36 = 864$
- C. $321 \times 16 = 5{,}036$

- **B.** 43 × 702 = 30,186
- **D.** $81 \times 205 = 16,605$

6. The product of 372 × 52 is close to

- A. 20,000
- B. 15,000

C. 7,000

D. 10,000

- A. 30,000
- **B.** 32,000

B. <

C. 50,000

D. 40,000

- 1
 - 199 × 43

C. =

A. >

- A. 48
- C. 48 hundreds

- **B.** 48 tens
- D. 48 thousands

10. The missing number in the product is

- A. 2,882
- B. 10,122
- C. 2,892
- **D.** 2,880



Huttiplication Problems in the Real World

How to solve multistep problems?

Some problems require more than one step. To solve them, write out the steps you will use.

For Example

Sayed sells pins and scarves. Early in her career she earned 6,000 pounds in just 4 months. If he sold 80 pins for 15 pounds each, how much did he earn from selling scarves?





the state of the state of

- What question do you need to answer? How much did he earn from selling scarves?
- What information do you have? the total amount he earned: 6,000 pounds, the number of pins sold: 80 pins: the amount paid for each pin: 15 pounds per pin





 How can you find the amount he earned selling scarves? Find the amount he earned selling pins. Then subtract that from 6.000 pounds





• Step 1: Find the amount he earned selling pins.

 $80 \times 15 = 1,200 \text{ pounds}$

• Step 2: Find the amount he earned selling scarves

6,000 = 1,200 = 4,800 pounds

Sayed earned 4,800 pounds selling scarves.

Notes for parents:

 Remind your child that multistep problem is a problem that involves more than one operation.



Example

Ahmed has a restaurant in Cairo in Monday he sold 213 sandwish of chicken, in Tuesday he sold 225 sandwish of chicken. He makes each sandwish of chicken with 75 grams of chicken. How many grams of chicken did he use in Monday and Tuesday?



Solution [9]



- The number of grams that sold in Monday = $213 \times 75 = 15,975$ grams.
- The number of grams that sold in Tuesday = 225 × 75 = 16,875 grams.
- The number of grams that sold in Monday and Tuesday = 15,975 + 16,875 = 32,850 grams.

Example 2

A merchant bought 137 boxes of soft drinks for 97 pounds each and 17 boxes of cookies for 45 pounds each. How much money did he pay?



Solution [7]



- The price of soft drinks = $137 \times 97 = 13,289$ pounds.
- The price of cookies = $17 \times 45 = 765$ pounds.
- The total price = 13,289 + 765 = 14,054 pounds.



your understanding

Trousers costs 125 pounds, a shirt costs 140 pounds and shoes costs 135 pounds. Ahmed went to buy 3 trousers, 2 shirts and shoes.

How much is the total cost?



Some word problems have hidden question or questions that must be answered before you can solve the problem. You have to determine what operation to use and what strategies will you use to help you figure out how to solve the problem.

Sandwiches at the diner are 24 pounds, a salad costs
3 pounds and a glass of juice is 8 pounds. A Family went to
the diner and order 3 sandwiches, 2 salads and 3 glasses
of juice.



- a. How much will the family pay for the 3 sandwiches?
- b. How much will the family pay for the 2 salads?
- c. How much will the family pay for the 3 glasses of juice?
- d. How much is the total bill?
- 270 pounds. Yara and her friends bought 12 shirts and 13 sweaters.



- b. How much will they pay for the sweaters?
- c. How much is their bill?



3. Mona has a restaurant in Al-Quesyr. In February, Mona sold 402 kebabs. In March, she sold 753 kebabs. She makes each kebab with 83 grams of meat. How many grams of meat did she use in February and March?



4. (1) Mona's son Wael makes baklava to sell at his family's restaurant. His recipe calls for 170 grams each of pistachios, walnuts, and hazelnuts. In order to make enough for the customers, he needs to multiply his recipe by 18.
How many total grams of nuts will he need?



5. A factory can produce 500 pairs of pants during a 10-hr. day.
If the factory produces 55 pairs per hour for the first 8 hr.
How many are left to produce during the rest
of the day?
How many pairs of pants can produce during 30 days?



6. Petra saved 123 pounds, Logy saved 12 times as Petra, Mariam saved 15 times as Petra.
How much money they saved?



- 7. For Wael's baklava syrup, he needs 250 mL of honey,
 15 mL of orange extract, and 30 mL of lemon juice per recipe.
 How many total milliliters of liquid ingredients will he
 need for the sauce if he needs to make 18 batches?
- Her recipe uses 140 grams of sesame seeds to make 120 milliliters of tahini. She makes the recipe 20 times each week. How many grams of sesame seeds does she use each week? How many milliliters of tahini does she make in 36 weeks? Convert the amount in milliliters to liters.



 A factory produces 6,580 toys each month. Another factory produces 7,375 toys each month. Find the difference of their product in one year.



Mona makes freshly squeezed lemonade each day for her customers. She uses 6 lemons for each liter of lemonade. She makes 8 liters of lemonade a day. After 365 days, how many lemons has she used?



How many liters of lemonade does she make in 365 days?

Mona uses 1,133 grams of sugar daily.

How many grams does she use in 30 weeks?

Unit Three Assessment



1. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a	. 18 liter = 1,800 mL	[]
b	. 13 × 17 = 221	[]
C.	$35 \times 76 = (3 \times 7) + (3 \times 6) + (5 \times 7) + (5 \times 6)$	[)
d	. 176 × 20 = 352	[)
e.	$30 \times 10,000 = 300,000$	[)
f.	257 × 33 = 8,481	[)

2. Choose the correct answer.

- a. 876 × 72 is near close to
 - A. 56,000
- B. 5,600
- C. 63,000
- **D**. 72,000

b. There are

grams in 17 kilograms.

- A. 170
- **B.** 1,700
- C. 17,000
- **D.** 170,000

- c. 58 × 294 () 63 × 191
 - A. >

B. <

- C. =
- d. What is the unknown value in the area model of 23×45 ?
 - A. 120
- B. 150

C. 12

D. 150

20 3 40 800 ? 5 100 15

- **e.** × 7 = 7,000
 - A. 100
- **B.** 1,000
- **C.** 10,000
- D. 100,000
- f. Which partial products can be used to solve 83 × 15?

A.
$$[8 \times 1] + [8 \times 5] + [3 \times 1] + [3 \times 5]$$

A.
$$[8 \times 1] + [8 \times 5] + [3 \times 1] + [3 \times 5]$$
 B. $[80 \times 10] \times [80 \times 5] \times [3 \times 10] \times [3 \times 5]$ **C.** $[80 \times 10] + [80 \times 5] + [3 \times 10] + [3 \times 5]$ **D.** $[80 \times 1] + [80 \times 5] + [3 \times 10] + [3 \times 5]$

3. Complete.

f.
$$15 \times 2.103 =$$

- 4. Match the cards that have the same meaning.
 - a. $[60 \times 70] + [60 \times 4] + [5 \times 70] + [5 \times 4]$

1. 19,500

700

	700	4
60	42,000	240
5	3,500	20

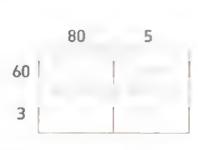
2. 1,950

c. 780 × 25

3. ↓ 65 × 74

d. 195×10

- Fill in the area model. Then explain which parts of the area model and the standard algorithm match.



For Mostafa's baklava syrup, he needs 240 milliliters of honey, 14 mL. of orange extract, and 25 mL. of lemon juice per recipe. How many total milliliters of liquid ingredients will he need for the sauce if he needs to make 20 batches?





THE ALL

Division with Whole Numbers

*Emple Life () () (

O Did You Know?!

Cheetah is the fastest land animal in the world. A cheetah are seen 112 kilometers per hour if a cheetah ran for quarter an hour at its fastest speed, how far could it run?



Concept



Models for Division



The ostrich is the world's largest bird. It stands up to a massive 2.7 m tall and weighs as much as 159 kg - that's around A m taller than the average man, and the weight of two men combined!

1		
Lesson 1	Understanding Division	Students will use story problems to explain the meaning of division problems
Lesson 2	Using the Area Model to Divide	Students will use the area model to solve division problems.
Lessons	Using the Partial Quotients Model to Divide	Students will use the partial quotients model to solve division problems.
76(4 4' , 'F	Estimating Quotients	Students will use estimations to check the reasonableness of their answers.





What is division?

Remember:

The act of breaking into equal parts or groups.

Dividend: The number being divided.

The number that divides.

Quotient: The answer to a division problem.

Remainder: The amount left over that is not enough to form another equal group.



$$28 \div 3 = 9 \quad R$$

Dividend Divisor Quotient Remainder Equal groups story problems: Note that

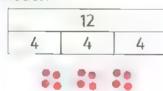
The remainder is always less than the divisor.

Bassem has 12 muffins. He wants to put them equally in 3 boxes. How many muffins will be in each box?



You can divide to find the number of muffins in each box,

Model:

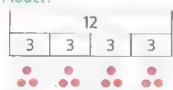


• Equation :

Bassem has 12 muffins. He wants to put them equally in boxes of 3 muffins each. How many boxes will be need?

You can divide to find the number of boxes.

Model:



Equation:

Notes for parents:

 Explain that the divisor in the two problems is the same, but the divisor and quotient represent different things.

Comparison story problems:

A red car costs 50 L.E., which is 5 times as much as a blue car costs. How much does a blue car cost?





TILE.

A blue car costs 10 L.E.

A red car costs 50 L.E., and a blue car costs 10 L.E.

How many times is the cost of the red car as the cost of the blue car?

The cost of the red car is 5 times as the cost of the blue car.

Example

Use the three numbers given to create a division equation.

a. 7,56 and 8

b. 550, 55 and 10

Solution []

a.
$$56 \div 8 = 7$$

or
$$56 \div 7 = 8$$

b.
$$550 \div 55 = 10$$

or
$$550 \div 10 = 55$$





ffins

nt

your understanding

a. Salwa has 35 books. She puts 5 books on each shelf.

How many shelves does she use?

b. Salwa has 35 books. She wants to put them equally on 5 shelves.

How many books will be on each shelf?

Ask your child to visualized what is happening in each problem to help solve.

Ask your child to read the story problem aloud and help him/her solve.

Exercise 19

Under Landing Dischion

on lesson 1

• REMEMBER

•			

OWNER

PROB	LEM	SOL	VING
1 1707	No. of Part Asset	200	7 1111

From the school book

1. Complete the following table.

	Division Equation	Dividend	Divisor	Quotient	Remainder
a.	20 ÷ 5 = 4				
b.	36 ÷ 4 = 9			_	-
C.	50 ÷ 10 = 5			-	
d.	75 ÷ 5 = 15		According		
e.	68 ÷ 7 = 9 R5		The same A		
f.	28 ÷ 5 = 5 R3				

2. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. The divisor is always greater than the remainder.

[]

b. In the equation $15 \div 3 = 5$, here 5 is the divisor.

[]

c. Division means sharing equally.

[]

d. In the division equation $28 \div 7 = 4$, the divisor is 7

f 1

e. The dividend in the equation $16 \div 2 = 8$ is 16

ſ

Choose three of the numbers given and use them to create a division equation. Use words, drawings, diagrams, or numbers to prove your division equation is true.



Find the quotient in each of the following using the given model.

a. $21 \div 3 =$

	21	

b. $14 \div 2 =$

	14	-	
_			

c. 40 ÷ 4 = ---

4	0	

d. 30 ÷ 5 = --

	30	

e. $36 \div 3 = -$

36

f. 18 ÷ 6 =

	1.	8	

5. Answer the following questions.

- a. If 18 plums are divided equally into 3 bags, then how many plums will be in each bag?
- b. If 18 plums are packed 3 to a bag, then how many bags will there be?
- c. A red hat costs 400 L.E., which is 4 times as much as a blue hat costs. How much does a blue hat cost?
- d. A red hat costs 400 L.E. and a blue hat costs 100 L.E. How many times is the cost of the red hat as the cost of the blue hat?
- e. In a school program, 35 students participated. The teacher told the students to make 5 equal groups. How many students will be there in each group?
- f. 18 toys are to be packed in boxes equally in groups of three toys in each box. How many boxes will be required?
- g. How many weeks are there in 56 days?

6. Read the division problem and circle which model you think best matches the scenario.

Explain your thinking.

There are 327 job applicants for a new business. They will need to place the people in 6 rooms while they fill out applications. How many people will be in each room?

- A. Total = 327
 - ? ? ?
 - ????

- B. Total = 327
- (6) (6) (6) (6)
- 6666
 - 6 16 6



- 7. While dividing the largest two-digit number by X, the quotient
- is 9 and 9 as a remainder. What is the value of X?





Multiple Choice Questions

Choose the correct answer.

- In the equation 27 ÷ 3 = 9, the quotient is
 - A. 27
- **B**. 3
- **C**. 9

- D. zero
- The divisor in the equation $48 \div 6 = 8$ is
 - A /:
 - **A.** 48
- **B**. 6
- C. 8
- D. zero

- 3. Dividend = Quotient × divisor +
 - A. Dividend
- **B.** Quotient
- C. Divisor
- D. Remainder
- 4. 36÷ ---- = 9
 - A. 3

B. 4

C. 5

D. 6

- 5. --- ÷ 5 = 9
 - A. 59

B. 54

C. 45

D. 95

- 6. $29 \div 4 = 7 R$
 - A. zero
- **B**. 1
- C. 2
- **D**. 3

- Zero divided by any non-zero number gives as a quotient.
 - A. zero
- B. same number

C. 1

D. 2

- 8. Giovanni needs 36 balloons for the party but balloons come in a pack of 9. How many packs should he buy?
 - A. 2

B. 3

C. 4

- **D**. 5
- 9. If Bassem earns 8 pounds per day, in how many days will he be able to earn 72 pounds?
 - A. 7

B. 9

C. 10

D. 11

- 10. The division equation of this bar diagram is
 - **A.** $3 \times 10 = 30$
 - C. $30 \div 3 = 10$

- **B.** 10 + 10 + 10 = 30
- 30
- **D.** $10 \div 30 = 3$
- 10 | 10



















Loarn

Area model to divide

Remember:

Basic facts, pattern and place value can help you divide.

$$2 \times 3 = 6$$
 $2 \times 3 = 6 \times 3 =$

Three zeroes

Three zeroes

Use the basic fact 6 ÷ 3 = 2

$$6 \div 3 = 2$$
 $6 \ 0 \div 3 = 2 \ 0$
 $6 \ 0 \ 0 \div 3 = 2 \ 0 \ 0$
 $6, \ 0 \ 0 \ 0 \div 3 = 2, \ 0 \ 0 \ 0$

Three zeroes

Three zeroes

Edward runs 1,845 meters in 15 minutes. How many meters does he cover in each minute?

Divide: 1,845 ÷ 15

By using the area model

Draw a long rectangle and write 15 on 15 the smaller left side of the rectangle.

Try to use basic facts and pattern to get close to 1,845

$$15 \times 1 = 15$$
 , $15 \times 10 = 150$

$$15 \times 100 = 1,500$$
 [close to 1,845]

100

There are 345 meters left to be divided by 15

$$15 \times 2 = 30$$

$$15 \times 20 = 300$$
 [close to 345]

100

Notes for parents:

 Remind your child that he/she practised solving devision problems with a 1-digit divisor using an area model in primary 4

Since, there are 45 meters left to be divided by 15

$$15 \times 1 = 15$$
, $15 \times 2 = 30$, $(15 \times 2 = 45)$ [the same number]

$$\frac{-1.500}{345} \begin{vmatrix} -300 \\ 45 \end{vmatrix} = \frac{45}{00}$$

• Subtract: 45 - 45 = 0



Add the 3 numbers 100 + 20 + 3 = 123

then: $1.845 \div 15 = 123$

Edward covers 123 meters each minute.

Example -

Use the area model to solve each of the following problems.

Solution 1



Then $9,798 \div 71 - 100 + 10 + 10 + 10 + 8 = 138$

b.

Then, $7,391 \div 35 = [100 + 100 + 10 + 1]$ and remainder 6 = 211 R6



your understanding

Solve the following problems using the area model.

Remind your child to use multiplication to check his/her answer when he/she solved a division problem.

Exercise

Using the Area Model to Divide

on lesson 2

	-	-	. 4	-	3. 4	-	94	-
-	14	Б.,	N/A	à.	8.0	м	ы	
1	115	Е	174	ш	1=5	13	ш	





From the school book

1. Complete each set of multiplication and division equations.

$$3 \times 50 =$$

b.
$$6 \div 3 =$$

c.
$$40 \times 2 =$$

$$400 \times 200 = -$$

d. 6.
$$4 \times 10 =$$

$$4 \times 100 = -$$

$$4 \times 1,000 =$$

 $15 \times 20 = -$

 $15 \times 200 =$

 $q_{i-1} = 15 \times 2 =$

$$1,800 \div 6 =$$

f.
$$1.112 \times 3 = -$$

h.
$$35 \div 7 =$$

$$8 \times 20 =$$

1. 8×2=

$$3,500 \div 7 =$$

$$8 \times 200 =$$

2. Use the area model strategy to solve the division equations.

a.
$$= 2,207 \div 7 =$$





e.
$$1,035 \div 23 =$$



g.
$$4,410 \div 45 =$$



b. $2,794 \div 11 =$

d. $7.896 \div 12 =$



h.
$$5,479 \div 15 =$$

Choose the correct area model that represents each problem and fill in any missing numbers. Then, use the area model to answer each problem.

€.

$$\begin{vmatrix}
9, 234 \\
-8, 100 \\
\hline
1, 134
\end{vmatrix}
-
\begin{vmatrix}
1, 134 \\
-810 \\
\hline
324
\end{vmatrix}
-
\begin{vmatrix}
162 \\
-162 \\
\hline
162
\end{vmatrix}
-
\begin{vmatrix}
162 \\
0
\end{vmatrix}$$

Put (√) to the correct statement and (X) to the incorrect statement.

- a. If $4 \times 6 = 24$, then $4 \times 600 = 2,400$
- **b.** $2,127 \div 17 = 25 \text{ R1}$
- c. $2,583 \div 21 = 123$
- d. $2,525 \div 25 = 55$
- **e.** $4,712 \div 31 = 152$
- f. The following area model represents the problem 1,456 \div 13 = 112

	100	10	1	1
13	1, 4 5 6	156	2 6	1 3
	- 1, 3 0 0	-130	- 1 3	- 1 3
	1 5 6	26	1 3	0 0

- 5. Writing About Math. Error Analysis. Look at the problem, and analyze the student's area model. Identify what the student did incorrectly.

Divide: 2,852 ÷ 24 =

Student's area model: 24 2,852

$$2.852 \div 24 = 20$$

Challenge

6. Which choice best completes the area model to find 1,754 ÷ 14?

- A. 10
- B. 20
- **C**. 30
- D. 100

100 ? 5 1, 7 5 4 3 5 4 7 4 -1, 4 0 0 - 7 4 R4 3 5 4 7 4 0 4



Choose the correct answer.

)

]

]

]

]

]

 In the opposite area model, which choice best represents the problem?

A.
$$1,740 \div 15 = 1,151$$

C.
$$1,740 \div 15 = 116$$

B.
$$1.740 \pm 15 = 100 \pm 151$$

D.
$$1,740 \div 51 = 116$$

2. Which area model best represents 2,583 ÷ 21?

B.
$$21 = \frac{2,583}{483} = \frac{483}{263} = \frac{263}{000}$$

100

3.
$$2,465 \div 16 = 154 R - - - -$$

20

5.
$$2,215 \div 15 = 147 R$$



Using the Fartle! Quotients Model to Divide

Estimating Quutlents



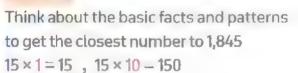
Using the partial quotients model to divide

A factory made 1,845 T-shirts in 15 days. If the factory made the same amount daily , how many T-shirts did the factory make each day? Divide: 1,845 + 15



Draw a begining model as shown.

15 1, 845



- $15 \times 100 = 1,500$ (close to 1,845)
- Write 1,500 below the dividend and 100 to the right of the vertical line as shown.
- Subtract: 1.845 -- 1.500 = 345



Look at what is remaining of the dividend (345) we need to divide it by 15

$$15 \times 1 = 15$$
, $15 \times 10 = 150$

- $15 \times 100 = 1,500$ (larger than 345) then we can use $15 \times 10 = 150$
- Write 150 below the remainder [345] and 10 to the right of the vertical line as shown.
- Subtract: 345 150 = 195

15 1, 8 4 5 1, 5 0 0 100 150 10

We still need to divide 195 by 15 so, we can use $15 \times 10 = 150$ and follow the last step as shown.

15)	1, 8 4 5	
-	1,500	100
	3 4 5	
-	150	10
	195	
_	150	10
	4 5	

Notes for parents:

Remind your child to start division from the left.



At last we need to divide 45 by 15

$$1 \times 15 = 15$$
, $2 \times 15 = 30$

- $3 \times 15 = 45$ (the same number)
- Write 45 below 45 (the last remainder) and 3 to the right of the vertical line as shown.

All the numbers to the right are parts of the quotient.

Add all of them to get the quotient 100 + 10 + 10 + 3 = 123

then: $1,845 \div 15 = 123$

The factory made 123 T-shirts daily.

Write the answer [123] above the model of division [123]

Example 1

Use the partial quotients to solve the problem.

Solution [V]

Then,
$$5,238 \div 18 = 100 + 100 + 50 + 20 + 20 + 1$$

= 291

Then,
$$4,215 \div 12 = 300 + 50 + 1 = 351 \text{ R}$$



Your child may use any multiple of divisor to divide.

Estimating quotient

We can use estimation to check the reasonableness of our answers.

For Example. To estimate the quotient of 1,920 ÷ 16

Round the dividend to the nearest thousand.

Round the divisor to the nearest ten.

The answer is reasonable.

The quotient = 100 + 10 + 10 = 120

Example 2

Estimate using compatible numbers.

Then, solve using an area model or the partial quotient model $4,641 \div 51$

Solution [97]



- Estimate: 4,641 > 5,000 Estimate: 51 > 50

- Then, $5,000 \div 50 = 100$

Finding the actual quotient using area model:

Then, $4,641 \div 51 = 50 + 40 + 1 = 91$

Estimation: 100

Exactly: 91

The answer is reasonable.



your understanding

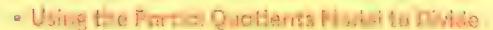
- 1. Solve the following problems using the partial quotient.
 - a. 1,170 ÷ 26
- **b.** 9,952 ÷ 32
- 2. Estimate using compatible numbers. Then, solve using an area model or the partial quotient model.
 - a. 3.024 ÷ 14

b. 7,550 ÷ 25

Notes for parents:

 Discuss the purpose of rounding versus basic facts to estimate by asking your child which method makes the problem easier to calculate mentally. Demonstrate how using a basic fact makes estimating easier for 4 641 ÷ 51 by having your child try to find each of these quotients mentally 5 000 ÷ 50, 4 500 ÷ 50

on lessons 3&4



· Butimoting Cootings

• REMEMBER

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. From the school book

Look at the partial quotients solution for each problem. Fill in the blanks and empty boxes to complete the solution.

Use the partial quotients strategy to solve the problems.

a.
$$4.1,536 \div 16 = -$$
 | **b.** $1.576 \div 18 = -$

c.
$$1,620 \div 12 =$$

d.
$$6.305 \div 13 =$$

d.
$$6,305 \div 13 =$$
 | **e.** $7,875 \div 32 =$ |

h.
$$1,875 \div 24 =$$

f.
$$2,229 \div 25 =$$

\mathcal{I} Put (\mathcal{I}) to the correct statement and (\mathcal{I}) to the incorrect statement.

- a. 12)1, 6 2 0 - 1, 2 0 0 100 4 2 0
 - 120 10 300
 - 120 10 180
 - 1 2 0 | 10 6 0
 - <u>60</u> 5
 - , then $1,620 \div 12 = 180$

- **b.** 3,465 ÷ 15 = 231 R7 [
- **c.** $6,675 \div 25 = 276$ [
- **d.** 1,470 ÷ 14 = 105
- **e.** 1,111 ÷ 11 = 11 {
- f. 1,212 ÷ 12 = 101 [

Estimate using compatible numbers. Then, solve using an area model or the partial quotients model.

- a. $5,814 \div 47 =$
 - Estimation:

Solution:

c. 1.448 ÷ 48 =

Estimation: ——

Solution: ----

b. $6,397 \div 28 =$

Estimation:

Solution:

d. $7.061 \div 23 =$

Estimation:

Solution:

e. 6,658 ÷ 69 = ____

Estimation:

Solution:

f. $1,064 \div 19 =$

Estimation:

Solution:

5. Which of the following is the division equation for this model?

A. $1,700 \div 17 = 123 \text{ R8}$

B. $2,009 \div 17 = 123 \text{ R8}$

C. $2,040 \div 17 = 123 R8$

D. $123 \div 17 = 8$

Concept

Dividing by 2-Digit Divisors



O Did You Know?!

The emperor penguin is the world's largest penguin. It can weigh up to 40 kg. In the Antarctic, an adult male emperor penguin will keep a single egg warm for about 63 days until the egg hatches.

Albout how many weeks will the penguin keep the egg warm?

esson No.	Lesson Name	Learning Objectives			
Using the Standard Algorithm to Divide		Students will use the standard algorithm to divide by a 2-digit divisor.			
	Checking Division with Multiplication	 Students will use the standard algorithm to divide by a 2 digit divisor, Students will use multiplication to check answers to division problems 			
Lesson /	Multistep Story Problems	Students will solve multistep story problems involving whole numbers and the four operations.			





- Using the Standard Algorithm to Divide
- Checking Division with Multiplication

Standard algorithm to divide

The price of 25 similar toys is 5,325 pounds. If you want to know the price of each toy,

you can divide 5,325 : 25 or 25 5, 325





Step 1		Step 2			
25)5,325 but!	write 0	0 2 5)5,325 5 0 3	 Drvide 53 ÷ 25 Write 2 over 3 Multiply 2 × 25 = 50 Write 50 v under 53 Subtract 53 – 50 Compare 3 < 25 		
Step 3			Step 4		
	25 25 25 25 25 25 25 25 25 25 25 25 25 2	5,325 50 32 25 1 75	 Bring down the ones (5) Divide 75 ÷ 25 Multiply 3 × 25 = 75 Write 75 * under 75 Subtract 75 - 75 Compare 0 < 25 		

Draft You can use this draft to estimate the result of dividing by 25 $1 \times 25 = 25$ $2 \times 25 = 50$ 53 ← $3 \times 25 = 75$ $4 \times 25 = 100$ 53 lies between 50 and 75

53 lies between 50 and 75 So, we take 2 when dividing 53 by 25

, then the price of each toy is 213 pounds.

Notes for parents:

 To help your child remember all steps in the division algorithm, let him/her use the following mnemonic or make up one of his/her own: Don't Make Siliy Careless Blunders (Divide, Multiply, Subtract, Compare, Bring Down).

Other Examples:

a. With a remainder 3,594 ÷ 19



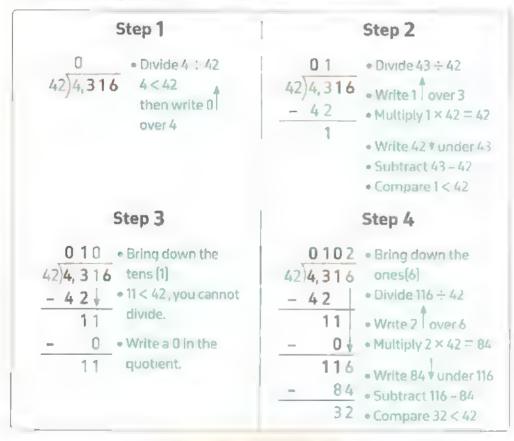
The remainder should always be less than the divisor.

, then $3.594 \div 19 = 189 \text{ R}3$

b. Zero in the quotient 4,316 ÷ 42

The order of division is as follows:

Divide
Multiply
Subtract
Compare
Bring down
Repeat this order
until the division
is complete.



Draft $42 \times 1 = 42$ $\boxed{43} = 42 \times 2 = 84$ $\boxed{116} = 42 \times 3 = 126$

[,] then $4,316 \div 42 = 102 R 32$

Remind your child of including the remainder as a part of the answer.

Example 1

Divide by using the standard algorithm.

a.
$$5,850 \div 26$$

, then
$$5,850 \div 26 = 225$$









your understanding

Divide.

Notes for parents:

• Remind your child to start division from the left.



How can you check division?

To check division, you can use the idea that multiplication and division are inverse operations. Multiply the quotient by the divisor. Then add the remainder. The sum should equal the dividend.

Dividend = [Divisor × Quotient] + Remainder

The check for example 1 is shown below.

a.
$$5.850 \div 26 = 225$$

b.
$$4,995 \div 14 = 356 R11$$

Dividend = (Divisor × Quotient) + Remainder

Check

Example 2

Divide 14'1, 697, then check your quotient with multiplication.

Solution [V]





your understanding

Divide 2,916 \div 12, then multiply to check your answer.

Help your child check his/her answer with multiplication.

· Uning the franched Alperi Impto Divide

· Chedding E vision with Mulliplication

on lessons 5&6

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1. Divide using the standard algorithm for division.

Solve the following problems. Check your answer.

a. 1,116 ÷ 12

b. 4,609 ÷ 13

c. 3,675 ÷ 25

d. 4,251 ÷ 34

e. 9,036 ÷ 36

f. 5,356 ÷ 52

g. 9,778 ÷ 25

h. 2,838 ÷ 11

i. 1,919 ÷ 19

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. If $735 \div 21 = 35$, then $735 \times 21 = 35$

b. If $3,075 \div 25 = 123$, then $25 \times 123 = 3,075$

[

c. If $11 \times 128 = 1,408$, then $1,410 \div 11 = 128 R 2$

[

d. If $17 \times 101 = 1,717$, then $1,717 \div 17 = 101$

•

e. If $2,229 \div 14 = 159 R 3$, then $14 \times 159 = 2,229$

,

- 4. Compare using (<, = or >).
 - a. 4.216 ÷ 34
- 126

 2×130

- **b.** 9,225 ÷ 45
- 200+5

- c. 16,002 ÷ 63

- **d.** 9,050 ÷ 25
- 300 + 52

- e. 23,112 ÷ 72
- 3 × 120
- f. $14,640 \div 61$
- 20 × 12

- 5. Solve the problems using the standard algorithm. Check your work using an area model or the partial quotients model.
 - a. At her cafe, Rana sells cookies baked by a local bakery. She receives an order of 350 cookies. Rana packages the cookies in groups of 12 cookies per bag. Solve to find how many full bags, containing 12 cookies each, Rana can sell from her order of 350 cookies and how many cookies are left over.

b. How could Rana package the cookies so that each bag contains the same number of cookies and she has none left over?

Ziad works in a clothing factory that produces shirts. He has 100 buttons and needs
16 buttons for each shirt. After dividing, he thinks he has enough to make 6 shirts and will
have 4 buttons left over. Is Ziad correct in his thinking? Why or why not? Explain your
thinking.

P Challenge

7. Complete.

If $5,528 \div A = 15 R 8$, then $A \times 15 =$



Multiple Choice Questions

Choose the correct answer.

1. The division equation that matches

$$125 \times 36 = 4,500$$
 is

A.
$$4,500 - 125 = 36$$

B.
$$125 \div 36 = 4,500$$

C.
$$4,500 \div 36 = 125$$

D.
$$125 + 36 = 4,500$$

Which expression can be used to check the solution of the following division problem?

$$8,668 \div 24 = 361 R 4$$

C.
$$361 \times 4 + 24$$

D.
$$24 \times 361 + 4$$

3. What is the value of M in the opposite division problem?

- A. 324
- B. 342
- C. 234
- **D.** 432
- 5. 8,283 ÷ 33 =
 - A. 25

- B. 215
- C. 512

D. 251

- 4. 9,363 ÷ 31 =
 - A. 302 R1
- B. 302 R 2
- C. 302
- D. 302 R 4
- 6. If $26 \times 352 = 9,152$, then $9,155 \div 26 =$
 - A. 352
- B. 352 R1
- C. 352 R 2
- D. 352R3

- 7. If 7,785 \div 31 = 251 R 4, then 31 × 251 =
 - A. 7,784
- **B.** 7,782

C. 7,781

D. 7,783

Multistep Story Problems

Learn

How to solve multistep story problems?

Here are some guided steps you may use when solving problems.



Analogophic (

- Read the story loudly more than one time carefully.
- Identify the details and quantities given.
- Identify the hidden question (if exists).
- Search for key words.



THAT

- Decide the operation (+, -, ×, ÷).
- Decide the strategy you can use to solve the problem.



Solve

- Solve the hidden question (if exists).
- How can you use the strategy to solve the problem?





- How do you know your answer is correct?
- What other strategy could you use to solve the problem?

Example 1

In one year, a school used 15,730 red papers, 3,960 fewer blue papers than red papers, and 4,510 fewer green papers than blue papers.

How many papers were used in all?

Notes for parents:

Remind your child that multislep problem is a problem that involves more than one operation.













Solution 💇



The school used 34,760 papers in all.

Example 2

Hany and his father are going on a road trip to his grandfather's house, which is 700 km away. On the first day, they travel 253 km. On the second day, they travel 307 km. How many kilometers will they need to travel to reach his grandfather's house?

Solution [9]

The left distance after the first day = 700 - 253 = 447 km.

The left distance after the second day = 447 - 307 = 140 km.

then, they need to travel 140 km to reach the grandfather's house.

Example 3

Ashraf has 1,578 L.E. He bought a book for 52 L.E., and by the left money he bought 14 shirts of the same kind. What is the cost of each shirt?

Solution 💇

The left money = 1,578 - 52 = 1,526 L.E.

The cost of each shirt = 1,526 \div 14 = 109 L.E.

	1	0	9	
14)	1,	5	2	6
-	1	4		
		1	2	6
-		1	2	6
				0

Some story problems have hidden question or questions that must be answered before you can solve
the problem. You have to determine what operation to use and what strategies will you use to help you
figure out how to solve the problem.

Example 4

Amany wants to buy 150 m of cloth and there are two different kinds of the cloth. If the price of each 50 m from the first kind is 1,000 L.E. and the price of each 30 m from the second kind is 500 L.E.

How much money will be saved by buying the second kind?

Solution [V]



First kind: [1,000][1,000][1,000] 50 m 50 m 50 m

The price of the first kind = 1,000 + 1,000 + 1,000 = 3,000 L.E.

Second kind: 500 | 500 | 500 | 500 | 500 | 30 m 30 m 30 m 30 m

The price of the second kind = $500 \times 5 = 2,500$ L.E.

The saved money = 3,000 - 2,500 = 500 L.E.





your understanding

Amgd saved 550 pounds, Bassem saved 3 times as much as Amgd and Sameh saved 900 pounds more than Agmd. How many pounds were saved by all of them?

Notes for parents:

· Ask your child to read the problem carefully and plan to solve it, then ask him/her to look back to check his/her answer.

- - -

Mullistep Story Problems

on lesson 7

REMEMBER

© N→1 / M. OARRIY

PROBLEM SOLVING

From the school book

A baker made 140 servings of baklava for a party. If each baking tray holds 12 servings of baklava, how many trays will be needed to hold all the baklava?

Mom baked a batch of 12 balah el sham. Two balah el sham fell on the floor. If 4 children split the remaining balah el sham equally, how many balah el sham will each child get?

In one year, a textile factory used 11,650 meters of cotton, 4,950 fewer meters of silk than cotton, and 3,500 fewer meters of wool than silk. How many meters of fabric were used in all?

An architect is designing a bridge. The architect has two choices for materials. Mighty Steel sells 5 metric tons (t) of steel for 100,000 L.E. Silver Strong Steel sells 3 t of steel for 70,000 L.E.

If the architect needs 15 t of steel, how much money will be saved by purchasing from Mighty Steel?

- Computer Depot sold 762 reams of paper. Paper Palace sold 3 times as much paper as Computer Depot and 143 reams more than Office Supply Central. How many reams of paper were sold by all three stores combined?
- Zeinab ordered 12 packages of fabric squares to make a quilt. Each package has 18 fabric squares, and Zeinab used all the squares for her quilt. Reem made a quilt that was 13 squares wide by 13 squares long. How many fewer squares did Reem use than Zeinab for her quilt?
- 7. Nagi sold a total of 30 boxes of sports T-shirts at his store on Monday. These boxes contained only basketball T-shirts and football T-shirts. Each box contained 25 sports T-shirts. He earned 3 L.E. for each sports T-shirt he sold. He earned a total of 1,134 L.E. from the football T-shirts he sold. How much money did Nagi earn from the basketball T-shirts he sold?
- 8. Malek and his family are going on a road trip to his grandmother's house, which is 465 kilometers away. On Friday, they traveled 124 km. On Saturday, they traveled 210 km. How many kilometers will they need to travel on Sunday to reach his grandmother's house?

9. There are 1,354 animals in one barn. There are 574 goats, 346 cows and the rest are horses.

If 89 horses were sold, how many horses are left in that barn?

Amgd has 238 eggs in the warehouse. He collected another 122 eggs from his chickens yesterday. As he arranged all the eggs in trays, he accidentally dropped 28 eggs on the ground. How many unbroken eggs were left? Among the eggs left, there were 126 brown eggs; How many were white eggs?



- A hotel has 7 floors. The lobby, restaurant and gym are located on the ground floor. The guestrooms are on 1st to 6th floors.
 - 1. If there are 35 standard rooms on each floor, how many standard rooms are there?
 - 2. There are 18 suites altogether in the hotel. How many suites are there on each floor if each floor has the same floorplan?
- All grade 5 students need to finish a math quiz on their computers at home in 2 weeks. In the quiz, there are 23 questions and they have up to 2 minutes to answer each question.



- 1. What is the longest time a student can spend on the quiz?
- 2. Answering a question correctly will score 4 points. Nada answered 9 questions wrong. How many points did she score?

Challenge

It was the crazy sales week at the department store. Any item that is 2,000 pounds or more will get an instant discount of 200 pounds. People buying two pieces of clothing items gets 15 pounds off the second item.

Edward wants to buy a laptop computer that costs 2,099 pounds, a shirt that costs 22 pounds and a jacket that costs 136 pounds. How much does he need to pay?

DOMESTIC ASSESSMENT



1. Choose the correct answer.

- a. In the division equation $4.235 \div 35 = 121$, the divisor is
 - A. 4.236
- **B.** 35
- C. 121

100

D. 1

X

684

- b. Using the opposite area model to divide 3,084 ÷ 12, then the value of X is ___
 - A. 100
- B. 50
- C. 10
- D. 5
- 12 1, 200 1, 200 6001, 8 8 4 684 8 4

3,084 1,884

100

- c. By using the following area model to divide, then the suitable division equation is
 - A. $1.456 \div 13 = 1.102$

- 100
- 10

- **B.** $1.456 \div 13 = 211$
- C. $1,456 \div 13 = 112$

- 1,456 156
- $13 1 \cdot 3 \cdot 0 \cdot 0 \mid -1 \cdot 3 \cdot 0$
 - 26 13 _ 13

- **D.** $100,102 \div 13 = 1,456$
- d. If $3.012 \div 12 = 251$, then $251 \times 12 = 251$
 - A. 3,013
- **B.** 3,012
- C. 3,014
- **D.** 3,015

- **e.** If $14 \times 365 = 5{,}110$, then $5{,}111 \div 14 = 14$
- A. 365 R11
- B. 365
- C. 365 R1
- D. 365 R15

- f. $3,681 \div 35 = 105 R$
 - A. 3

B. 4

C. 5

D. 6

2. Complete.

- a. $3.915 \div 15 = -$
- b. If the price of 16 books is 560 pounds, then the price of each book equals
- pounds.
- c. Quotient × divisor + remainder =
- **d.** $3.561 \div 1 = -$
- **e.** $0 \div 51,362 = -$
- f. The quotient of $8,109 \div 25$ by using the opposite partial
- quotients model is -

- 25)8,109
- 2,500 100 5,609
- 5,000 | 200 609
- 500 109
- 100

Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. If
$$2,222 \div 15 = 148 R2$$
, then $15 \times 148 = 2,222$

[

b. If
$$29 \times 321 = 9{,}309$$
, then $9{,}309 \div 29 = 321$

[

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2 1 |

[

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e.
$$4,816 \div 43 = 112 R5$$

ſ

]

4. Match.

5. Divide.

- a. 57)5, 2 6 2 "using the standard algorithm"
- b. 6,203 ÷ 11
- "using the area model"
- c. 8.015 ÷ 46
- "using the partial quotients model"
- 6. There were 578 ducks in the nest yesterday. Today, 126 ducks were sold, and 46 ducks will be delivered to the market later. How many ducks will be left at the duck's nest?

Thomas 2 Hattoomical Operations and Alyabraic Thinking

5

Multiplication and Division with Decimals

- Compt 1 (1) (1) (2)





Multiplying Decimals

O Did You Know?!

The ant is one of the world's strongest creatures in relation to its size. A single ant can carry 50 times its own bodyweight, if an anti-weighs 0.005 grams; how many grams can this anticarry?

		Obţ			
	Multiplying by Powers of Ten	Students will explain patterns when multiplying whole numbers powers of ten.			
Lessons 1 to 3	Multiplying Decimals by Whole Numbers	Students will multiply a decimal by a whole number			
	Multiplying Tenths by Tenths	 Students will explain patterns when multiplying two decimals to the Tenths place. Students will use models to represent decimal multiplication. 			
Estimating Decimal Lessons Products		• Students will estimate products of decimals.			
4&5	Using the Area Model to Multiply Decimals	Students will use the area model to multiply decimals.			
Lessons 6&7	Multiplying Decimals Through the Hundredths Place	 Students will use the standard algorithm to multiply decimals through the Hundredths place. Students will use estimation to check the reasonableness of their answers. 			
	Multiplying Decimals Through the Thousandths Place	 Students will use the standard algorithm to multiply decimals through the Thousandths place. Students will use estimation to check the reasonableness of their answers 			
Lessons	Decimals and the Metric System	 Students will explain relationships between the metric system and decimals. Students will use decimals to represent equivalent measurements. 			
8 & 9	Measurement, Decimals and Powers of Ten	 Students will relate converting measurements in the metric system to multiplying by powers of ten. 			
Lesson 10	Solving Multistep Story Problems	Students will solve multistep story problems involving addition, subtraction, and multiplication of decimals.			

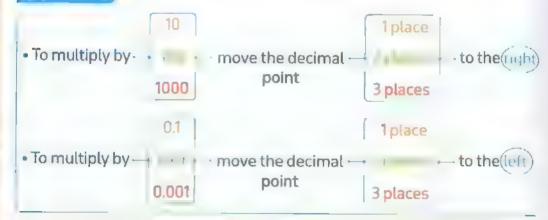
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- Multiplying Decimals by Whole Numbers
- Multiplying Tenths by Tenths

Lears 1

Multiplying by powers of ten



Examples for multiplying by 10, 100 and 1,000

Hint

You don't need to show a decimal point at the end of a whole number.

Examples for multiplying by 0.1, 0.01 and 0.001

•
$$74.2_{\odot}5 \times 0.1 = 74.25$$

•
$$742_{\odot}5 \times 0.01 = 7.425$$

$$-1742.5 \times 0.001 = 0.7425$$

Hint

This decimal has 4 decimal places. It is a decimal at Ten-Thousandths.

(Corrante

Sometimes you need to put one or more zeroes on the right [or on the left] of the number without changing its value.

For Example:

$$-3.7 \times 1,000$$

$$= 3.70 \times 100 = 370$$

$$= 3..700 \times 1,000 = 3,700$$

$$= 0.016,3 \times 0.001$$

$$= 0.0163$$

In the whole numbers, consider the decimal point at the right of Ones place (as: 35., 645.)

For Example:

$$450_{\circ} \div 0.01 = 4.50 = 4.5$$

Notes for parents:

 Your child may be confused which direction to move the decimal point when multiplying decimal numbers

Example 1

Find the result of each of the following.

a.
$$75.42 \times 10 =$$
 $75.42 \times 0.1 =$ $75.42 \times 100 =$ $75.42 \times 1000 =$ $75.42 \times 0.001 =$



Solution 💆

a.
$$75.42 \times 10 = 754.2$$
 $75.42 \times 0.1 = 7.542$ $75.42 \times 100 = 7542$ $0.75.42 \times 0.01 = 0.7542$ $75.420 \times 1000 = 75420$ $0.075.42 \times 0.001 = 0.07542$

b.
$$39_{\circ}0 \times 10 = 390$$
 $39_{\circ} \times 0.1 = 3.9$ $39_{\circ}00 \times 100 = 3900$ $39_{\circ} \times 0.01 = 0.39$ $39_{\circ}000 \times 1000 = 39000$ $0039_{\circ} \times 0.001 = 0.039$

your understanding

Find the result of each of the following.

b.
$$0.0823 \times 1,000 =$$

d.
$$0.524 \times 10 =$$

e.
$$5.3 \times 0.01 =$$

[·] Make sure that your child put more zeroes if needed when multiplying by powers of ten.

Multiplying decimals by whole numbers

How to evaluate: 0.4 × 3?

You can solve this problem in many ways as the following.

First Way

$$0.4 \times 3 = 4 \text{ tenths} \times 3$$

$$=\frac{12}{10}=1.2$$

Second Way

Multiply:
$$\begin{bmatrix} 4 \\ \times 3 \\ 12 \end{bmatrix}$$
, then $\begin{bmatrix} 0.4 \\ \times 3 \\ 1.2 \end{bmatrix}$ \longrightarrow 1 decimal place

Use the rule of:

The multiplication can be represented as repeated addition

So,
$$0.4 \times 3 = 0.4 + 0.4 + 0.4 = 1.2$$

You can use the number line to show that:





Example 2

Complete.

a.
$$0.5 \times 5 =$$

d.
$$0.45 \times 5 =$$

c.
$$3.5 \times 3 =$$

$$f. 4.15 \times 12 =$$

Solution (**

a. Since
$$5 \times 5 = 25$$

a. Since
$$5 \times 5 = 25$$

, then
$$0.5 \times 5 = 2.5$$

b. Since
$$5 \times 6 = 30$$

, then
$$0.5 \times 6 = 3.0 = 3$$

c. Since
$$35 \times 3 = 210$$

, then
$$3.5 \times 3 = 21.0 = 21$$

, then
$$0.45 \times 5 = 2.25$$

, then
$$0.015 \times 9 = 0.135$$

f. Since
$$415 \times 12 = 4980$$

, then
$$4.15 \times 12 = 49.80 = 49.8$$



Notes for parents :

 Tell your child that multiplying decimals by a whole number is the same as multiplying whole numbers He/She need to place a decimal point in his/her answer

Example 3

Find the value of each letter in each of the following:

- a. $3,245.8 = 3 \times (A) + 2 \times (B) + 4(C) + 5 + 8(D)$
- **b.** $30,604.07 = 3 \times (A) + 6 \times (B) + 4 + 7 \times (C)$

Solution [8]

- a. 3,245.8 = 3,000 + 200 + 40 + 5 + 0.8 (expanded form) = $3 \times (1,000) + 2 \times (100) + 4 \times (10) + 5 + 8 \times (0.1)$
 - , then A = 1,000 , B = 100 , C = 10 , D = 0.1
- **b.** 30,604.07 = 30,000 + 600 + 4 + 0.07= $3 \times [10,000] + 6 \times [100] + 4 + 7 \times [0.01]$

,then A = 10,000 , B = 100 , C = 0.01





your understanding

Complete.

d.
$$0.74 \times 9 = -$$

f.
$$7.2 \times 12 =$$

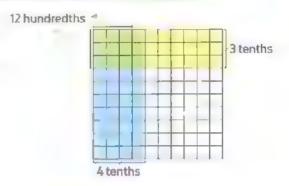
[·] Remind your child how he/she can write a decimal in expanded form

Multiplying tenths by tenths (with arrays)

Example: How to evaluate 04 = 03?

- Use two different colors to create this model:
- The first number (0.4) is represented by caloring 4 columns by blue.
- The other number (0.3) is represented by coloring, 3 rows by yellow.
- Count the squares colored twice in the array you created that they are 12 squares = 12 hundredths

So,
$$0.4 \times 0.3 = 0.12$$



Note that

Product of two numbers in the tenths place would have a product in the hundredths place.

Example 4

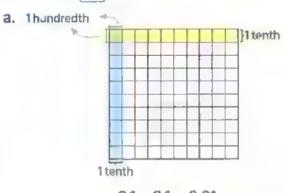
Find each of the following using arrays.

a.
$$0.1 \times 0.1$$

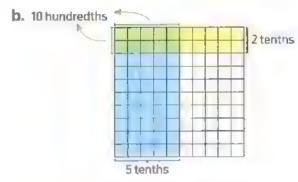
b.
$$0.5 \times 0.2$$

c.
$$1.2 \times 0.3$$



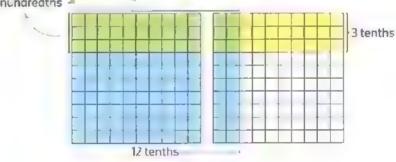


$$0.1 \times 0.1 = 0.01$$



$$0.5 \times 0.2 = 0.10 = 0.1$$





$$1.2 \times 0.3 = 0.36$$

Notes for parents:

Let your child use models to represent 0.7 × 0.6

Exercise

on lessons 1 to 3

Multiplying by Fowers of Ten

Multiplying Decimals by Whole Numbers

Multiplying Tenths by Tenths

D	CI	u	c	M	ā	c	Ď
n	щ	ч,	5-	ÌΔI	0	E	r





From the school book

1. Complete.

$$m.4215 \times 0.001 = ---$$

n.
$$26.71 \times 0.1 =$$

p.
$$42.5 \times 0.001$$
 –



2. Multiply to complete the table.

×	3	30	300
0.001	a.	g	m
0.01	b.	h	n.
0.1	С	Ī.	о
1	d	j	р
10	е	k	q.
100	f	L	r.

3. Find each of the following.



4. Complete each table.

$$14.96 \times 0.01 = -$$

$$14.96 \times 0.001 = -$$

$$25 \times 0.001 = -$$

$$5.7 \times 0.1 =$$

$$5.7 \times 0.001 =$$

5. By using the number line evaluate each of the following.

a. 0.3×3



b. 0.3×4



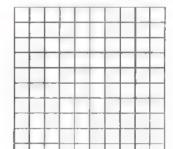
c. 0.3×5

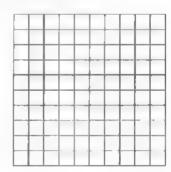




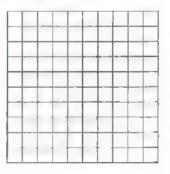
6. Use the base 10 grids to find the products.

a. (1)
$$0.1 \times 0.1 =$$
 b. (1) $0.3 \times 0.4 =$ ____

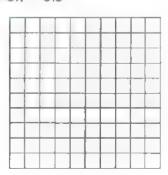




c. (4) 0.5 × 0.2 =

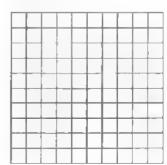


 $d. = 0.9 \times 0.5 = -$



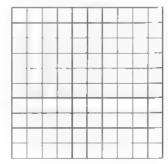
e.

$$0.6 \times 0.3 =$$



f.

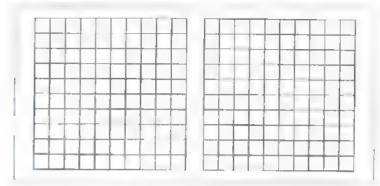
$$0.9 \times 0.8 =$$



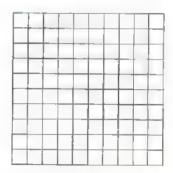
 $g. \Box 10.7 \times 0.8 = -$



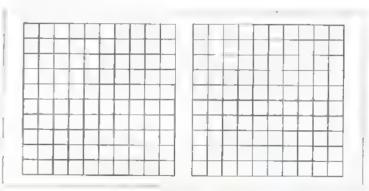
 $h. (1.6 \times 0.4 = ---$



i. [.] 0.5 × 0.6 = ___



j. 1.3 × 0.6 = ____



7. Find the unknown letters in each of the following.

c.
$$\Box$$
 20,403 = 2 × [F] + 4 × [G] + 3

d.
$$41.78,594 = 7 \times (H) + 8 \times (I) + 5 \times (J) + 9 \times (K) + 4$$



g.
$$4.005 = 4 + 5 \times (P)$$

f.
$$54.29 = 5 \times [M] + 4 + 2 \times [N] + 9 \times [O]$$

h.
$$305.09 = 3 \times [Q] + 5 + 9 \times [R]$$

8. Put the suitable relation (< or = or >).





b. 4.4×0.1



c.
$$72.15 \times 10$$

$$0.07215 \times 1000$$

d.
$$5 \times 0.001$$

$$0.05 \times 0.01$$

$$0.24 \times 100$$

g.
$$3.251 \times 100$$

$$325.1 \times 100$$



9. Complete.

i.
$$\sim 10 = 29.4$$

k.
$$(72.12 + 2.7) \times 10 =$$

L.
$$[8.35 - 2.14] \times 100 =$$

10. If 326 \times 7 = 2282 and 37 \times 52 $^-$ 1924, then complete the following without multiplying.

a.
$$3.26 \times 7 =$$

e.
$$0.37 \times 52 =$$

i.
$$0.00326 \times 7 =$$

11. L.) Hoda's stride is 0.72 meters. How far, in meters, will Hoda walk after taking 1,000 stride?

Use words and numbers to explain how you found your answer.



Choose the correct answer.

- A. 1924.5
- B. 192.45
- C. 0.19245
- D. 1.9245

- A. 987
- B. 9870
- C. 0.987
- D. 0.0987

2. 0.067 × 1,000 = -

- B. 67
- C. 0.067
- D. 670

- A. 23
- **B**. 0,23
- C. 230
- **D.** 0.023

- A. 8
- **B.** 0.8
- C. 0.08
- D. 0.008
- 3 × 2 hundredths = —
- A. 600
- B. 0.6
- C. 0.06 D. 0.006

- A. 0.44
- B. 44
- C. 440
- **D.** 0.044

- A. 0.5225
- **B.** 5.225
- C. 522.5
- **D**. 5225

- **A.** 0.1
- **B**. 0.01
- C. 0.001
- **D.** 100

10. 2.5 × 3 = ---

- A. 75
- **B**. 7.5
- C. 0.75
- **D**, 0.075

- A. > B. < C. =

- A. > B. < C. =

(to the nearest whole number)

- A. 6237
- B. 62
- C. 624
- **D.** 623

- A. 223,9
- **B**. 23.5
- C. 12.4
- D. 2.4



- Estimating Decimal Products
- Using the Area Model to Multiply Decimals

Learn 1 Estimating decimal products

You can use the strategies of estimation that you have studied to estimate decimal products.

Example 1

Estimate each of the following.

- a. 4.6 × 7.91
- **b.** 0.571×0.63
- c. 61.19 × 1.99

- d. 450.01 × 2.02
- e. 174.782 × 1.983

Solution [17]

a. 4.6×7.91

Estimate: $5 \times 8 = 40$

(if you round to the nearest Ones)

Or 4.6 × 7.91

Estimate: 4.5 × 8 - 36

(if you use benchmark decimal)

Note that

There are many ways to estimate decimal products.

a,

b. 0.571×0.63

Estimate: $0.6 \times 0.6 - 0.36$

(if you round to the nearest Tenths)

c. 61.19 × 1.99

Estimate: $61 \times 2 = 122$

[if you round to the nearest Ones]

d. 450.01 × 2.02

Estimate: $450 \times 2 = 900$

e. 174.782 × 1.983

Estimate: $175 \times 2 = 350$





your understanding

Estimate each of the following.

a. 4.99 × 6.012

b. 3.13 × 65.07

c. 39.56 × 12.04

d. 224.82 × 1.97



Notes for parents:

· Remind your child how he/she estimate decimats in different ways.

Using the area model to multiply decimals

Example: How to evaluate: 1.4 - 7.8?

$$50, 1.4 \times 7.8 = 10.92$$

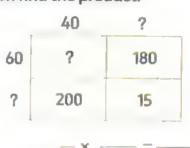


Example: How to evaluate: 38.2 × 0.51?

$$S_{0}, 38.2 \times 0.51 = 19.482$$

Example 2

Find the missing number in each of the following area models, write the problem, then find the product.



Remind your child how he/she multiply two whole numbers.

Solution [9

a. From the area model

, then

, then

60

15

 $|?| = 2 \times 5$

0.8

 $? = 5 \times 0.8$

0.32

 $2.8 \times 5.4 = 15.12$

200

Example 3

 $1? \times 2 = 0.8$

|?| = 0.4

Estimate the following product, then compare your estimation to the actual product: 5.4×2.7

Solution [V]



?

Estimation:

5.4 is estimated to 5

2.7 is estimated to 3

Then the estimation of the product is $5 \times 3 = 15$

Actual product:

14. 5 8

your understanding

Use the area model to complete each of the following.

It is clear that the estimation is acceptable.

Notes for parents:

Let your child use palce value to decompose each factor into its parts.

Loarn 3 Using multiplication patterns

9 x 4 = 36

$$50,9 \times 400 = 3,600$$

$$0.9 \times 4 = 3.6$$

$$0.09 \times 4 = 0.36$$

$$90 \times 40 = 3,600$$

$$9 \times 0.4 = 3.6$$

$$0.09 \times 0.4 = 0.036$$

$$9 \times 40 = 360$$

$$0.9 \times 0.4 = 0.36$$

$$0.9 \times 0.04 = 0.036$$

$$90 \times 4 = 360$$

$$9 \times 0.04 = 0.36$$

$$0.09 \times 0.04 = 0.0036$$

Note that

The number of zeroes (or decimal places) in the product must be the sum of the numbers of zeroes (or decimal places) in both initial numbers.

Example 4

Complete each of the following.

- a. Given that: $26 \times 59 = 1,534$, then
 - 1. $2.6 \times 5.9 =$
 - 2. 0.26 × 5.9 =
 - 3. 0.26 × 0.59 = __
 - 4. $26 \times 0.059 =$

- **b.** Given that: $271 \times 35 = 9.485$, then
 - 1. 27.1 × 35 -
 - 2, 27.1 × 3.5 =
 - 3. 2.71 × 3.5 =
 - 4. 0.271 × 3.5 =

Solution [9]

- a. 1. 15.34
- **2.** 1.534
- **b.** 1. 948.5

- **3**. 0.1534
- 4. 1.534

2. 94.85

3. 9.485

4. 0.9485

your understanding

Complete:

Given that: $12 \times 13 = 156$, then

- 1, 120 × 13 = _ _ _
- 2. 1.2 × 1.3 = _____
- 3. 0.12 × 1.3 = ____

- 4. 1.2 × 13 = ___
- 5, 12 × 0.13 = _ __
- 6. 1.2 × 0.13 = ____

- 7. 12 × 1.3 =
- 8. $0.12 \times 13 = -$
- 9. $0.12 \times 0.13 = -$

Let your child count zeroes in the product and compare with the sum of the numbers of zeroes in the two factors.

25

on lessons 4&5

Estimating Decimal Products

Using the Area Model to Multiply Decimals

REMEMBER

PROBLEM SOLVING

From the school book

1. Estimate the products by rounding or using compatible numbers.

a. III 24.3 × 1.8

Estimate: ---

b. 25.2 × 3.92

Estimate: — —

c. £11.5

Estimate:

d. 113 6.7 × 11.5

Estimate: —

e. 4.099 × 5.18

Estimate:

f. [...] 99.6 × 12.7

Estimate:

g. 🗐 58.25 × 99.3

Estimate:

h. 125.022 × 5.981

Estimate:

i. 649.9 × 0.8

Estimate:

Estimate:

k. 50.998 × 15.073

Estimate:

L 450.321 × 2.2

Estimate:

m. 🗔 121.352 × 3.8

Estimate:

n. 7.3×6.7

Estimate:

2. Look for patterns in each set of problems. Use the patterns to complete the unanswered problems.

a. (1) $80 \times 3 = 240$

b. $18 \times 42 = 756$

c. 157 × 56 = 8,792

d. $1.7 \times 600 = 4,200$

 $8 \times 30 = 240$

8×3= ____

180 × 42 =

157 × 560 =

7 × 60 =

 $1.8 \times 4.2 =$

15.7 × 5.6 = ____

 $7 \times 6 = 42$

 $0.8 \times 3 =$

0.18 × 4.2 = ____

1.57 × 5.6 = -

7 × 0.6 = ____

 $8 \times 0.3 = 2.4$

1.8 × 0.042 = ____

1.57 × 0.56 =

 $7 \times 0.06 = 0.42$

 $0.8 \times 0.3 =$

18 × 0.42 = ____

15.7 × 0.56 =

. ----

 $0.08 \times 0.3 =$

0.018 × 42 =

 $0.7 \times 0.6 = -$

 $0.8 \times 0.03 =$

 $18 \times 4.2 = -$

157 × 5.6 = —

0.7 × 0.06 = ----

 $0.08 \times 0.03 =$

0.18 × 0.42 =

157 × 0.56 =

 $0.07 \times 0.06 =$

3. Estimate the products of the following operations, then compare your estimation to the actual product.

a. 5.3 × 2.7 =

b. 18.8 × 7.1 = _____

 $c.7.82 \times 4.3 =$









f.
$$2.1 \times 0.67 = -$$



5. Look at the area models, Some of the numbers are missing. Use the information provided to fill in the blanks. Write the problem, and then find the product.

- 20 a. 111
- 8

- ? b. 🕮
- 6

- 1,000 50

- 1,200 60
- 360

- ? ,
- 80
- 32

- ? 80
- 24

Produact: -

Product:

?

- 30 C. 🚻
- 4

- d. 111
- ?
- 5

- 1,500 50
- 200

?

- 12,000 30
- 600 150

- ?

- 1,600
- 80
- ?

Product:

60

Product:

- е. 📖
- 40
- ?

- f. 30
- 4

- 3,200 80
- 560

21

- 180 2

- ?
 - 120

- 0.4 12
- 0.12

0.7

0.28

?

1.8

Product: -

Product:

4

?

- g.
- ? ?
- 0.3
- h.
- ?

- 7
- 350

35

1

- ?
- 10
- 3

?

- 0.2
- 10

?

- ? 16
- 1.2

Product:

Product: -

6. Complete.

a. Since
$$38 \times 47 = 1,786$$
, then $0.38 \times 4.7 =$

b. Since
$$11.3 \times 4.5 = 50.85$$
, then $1.13 \times 45 =$

c. If the area model of a problem is

, then
$$k + x =$$
 _ _

d. If the area model of a problem is

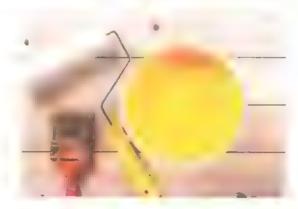
7. La Malak works for a construction company. The company had 12 pallets of cinder blocks delivered for a building project. Each pallet weighed 1.36 metric tons.

Help Malak revise and complete the area model to figure out how much the cinder blocks weighed all together. If necessary, place a decimal point in the partial products. Use estimation to explain why your answer is reasonable.

		1	0.3		0.06		
10	1	10	1	30	1	6	
2		2		6		12	

8. A Nadia is a museum curator. She wants to repaint the gallery walls, which are measured in meters.

There are four walls, each measuring 3.8 m × 15.2 m. Estimate how many square meters she needs to cover with paint. Explain your thinking.



Painting Supplies

Multiple Choice Questions

Choose the correct answer.

1. 12.99 × 4.01 Estimate:

A. 62

B. 52

C. 30

D. 26

2. 100.49 × 2.911 Estimate:

A. 200

B. 250

C. 300

D. 350

- 3. 2.85 × 4.1 =
- A. 11.085

B. 10.685

C. 11.685

D. 12

4. 4.3 × 3.4 =

A. 14

B. 14,02

C. 14.62

D. 12.62

5. Since $42 \times 51 = 2,142$

, then $4.2 \times 0.51 = -$

A. 214.2

B. 21.42

C. 2.142

D. 0.2142

6. Since $7.5 \times 4.3 = 32.25$

then $75 \times 0.43 = -$

A. 3.225

B. 32.25

C. 322.5

D. 0.3225

7. Since $9 \times 3 = 27$

, then 0.09×0.3

A. 0.27

B. 0.027

C. 2.7

D. 0.0027

8. 1.012 × 6.78 Estimate:

A. 6

B. 7

C. 8

D. 9

9. If the area model of a problem is

3 0.2 0.8 0.7 2.1

, then x + y =

A. 12

B. 12.14

C. 15

D. 15.04

10. If the area model of a problem is

L 8.0

15 k

m n 0.24

, then L + m =

A. 3

B. 3.3

C. 15.24

D. 20.14

6.87

- Multiplying Decimals Through the Hundredths Place
- Multiplying Decimals Through the Thousandths Place



(Loaviii)

How to multiply two decimals?

Just follow these steps:

- Ignore the decimal point in each of the two numbers, in order to obtain two whole numbers.
- Multiply the two whole numbers that you obtained by using standard algorithm.
- Add the number of decimal places in both initial numbers.
- OPlace the decimal point in the product found in step 2:

toenaria at the processing to the arms.

For Example

To multiply: 2.45 × 0.7, you can follow the following steps:

- 1. Ignore the decimal point to obtain two whole numbers 245 and 7
- 2. Multiply the two whole numbers :

2. 4 5
$$\Rightarrow$$
 2 dec mai places

× 0.7
$$\Rightarrow$$
 1 decimal place

1.7 15 \Rightarrow 3 decimal places

3. Add the number of decimal places in both initial numbers: 2+1=3

4. Place the decimal point in the product: 1.715

Example 1

Multiply:

a. 0.46×0.9

b. 21.9×4.8

c. 0.02×0.4

d. 8.124×0.47

Notes for parents:

 Explain that the product should have as many decimal places as the sum of the decimal places in the factors.

Solution (



You can multiply decimals directly as follows:

$$105.12 \Rightarrow 2 \text{ decimal places}$$

c.
$$0.02 \Rightarrow 2 \text{ decimal places}$$

0.008
$$\Rightarrow$$
 3 decimal places

Notice



We insert 2 zeroes to the left of 8 to make 3 decimal places.

d.
$$8.124 \Rightarrow 3$$
 decimal places

3.81828
$$\Rightarrow$$
 5 decimal places

Example 2

If the correct product of the problem $174 \times 68 = 118.32$ has been given without multiplying, place the decimal point correctly in one or both factors.

Solution [1]



Since the decimal point of the product after 2 decimal places, then the sum of numbers of decimal places in both factors equals 2 decimal places as 17.4×6.8 or 1.74×68 or 174×0.68

Note that



There are more than one correct answer is possible.

your understanding

Multiply:

a. 0.62×5.3

b. 2.734×0.39

Notes for parents:

· Let your child find the sum of decimal places in the factors and put the decimal point in the product to match this number.

From the school book

Place the decimal point in the product. you may have to write zeroes in the product.

a.
$$1.2 \times 2.4 = 288$$

c.
$$44 \times 5.3 = 17172$$

e.
$$1.75 \times 2.3 = 4025$$

g.
$$\bigcirc$$
 15.4 \times 0.49 = 7546

i.
$$3.14 \times 0.05 = 1570$$

d.
$$0.09 \times 0.3 = 27$$

f.
$$15.85 \times 4.3 = 68155$$

h.
$$\square$$
 11.68 × 2.4 = 28032

j.
$$0.24 \times 0.398 = 9552$$

The correct product for each problem has been given. Without multiplying, use reasoning to place the decimal point correctly in one or both factors. More than one correct answer is possible.

a.
$$38 \times 64 = 24.32$$

c.
$$826 \times 43 = 3.551.8$$

d.
$$18 \times 145 = 261$$

Find the product for each multiplication problem using the standard algorithm:

0. 2 8

8. 1 0 8 x 0.45

], [] 2.607 6. 4 2 9 1. 9

2 0

m. 📖 5, 3 2 8

6. 4 6 1 7. 9



4. Compare the products of the following by putting (<, > or =).

- a. 0.318×1.5

 3.18×0.15

b. 0.75 × 0.02

 7.5×0.2

- c. 13.6×0.4

 0.136×0.4

d. 7.3×0.28

 0.73×2.8

- e. 0.342 × 1.2

 3.42×0.12

f. 172 × 0.003

 0.172×0.3

- g. 48.2×3.7
- 4.82×37
- h. 42 × 1.532
- 4.2 × 15.32

i. 2.06 × 1.5

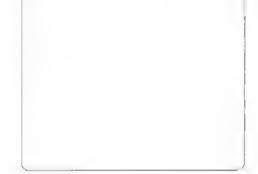
2.06	×	0.3	×	0.5

5. Solve the problem: 7.184 × 6.3 by two different ways by using.

a. Area models.

b. Standard algorithm.





Multiple Choice Questions

Choose the correct answer.

- 1. $0.676 \times 0.4 =$
 - A. 0.27
- B. 0.3068
- C. 2.704
- D. 0.2704
- 2. The decimal point in the product of
 - 3.9 × 4.25 is after — places.
 - A. 1

- **B**. 2
- C. 3

D. 4

- 3. 8.43 × 0.9 ≈ -
 - (to the nearest Hundredths) A. >
 - A. 7.5
- **B.** 7.59
- C. 7.58
- D. 7.588
- 4. 4.7 × 1.52.2 0.47×15.22
- B. < C. =

- 5. 2.7 × 0.0099 = -
 - A. 0.002672
- B. 0.02672
- C. 0.02673
- **D**. 0.2673
- $6. \ 0.025 \times 0.04 =$
- A. 0.01
- B. 0.001
- C. 0.0001
- D. 0.00001

- 7. 4.012 × 5.6 =
- [to the nearest Tenths]
- A. 22
- B. 22.5
- C. 22.47
- D. 22.467
- 8. 4.325 × 2.3 =
 - A. 9.9475
- B. 9.9745
- C. 9.95
- D. 13.84

- 9. 0.15 × 39.8
- 1.5×0.398
- A. >
- B. <
- **10.** $0.2 \times 0.631 = --$
- A. 1.262
- B. 0.1262
- C. 0.01262
- D. 0.001261



- Decimals and the Metric System
- · Measurement, Decimals and Powers of Ten



Metric units of length

Metric units of length are meter (m), centimeter (cm), millimeter (mm) and kilometer (km)



An ant is about 3 millimeters



A pencil is about 20 centimeters

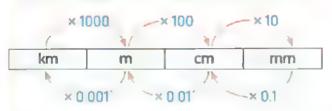


The length of a class is about 4 meters



The distance between Cairo and Alexandria is about 248 kilometers

Converting metric units of length:



Unit of Measurement	In Millimeters	In Centimeters	In Meters	
Millimeter	1	0.1	0.001	
Centimeter	10	1	0.01	
Meter	1000	100	1	

For Example

- $7.54 \text{ m} = 7.54 \times 100 \text{ cm} = 754 \text{ cm}$
- 14.16 mm = 14.16×0.1 cm = 1.416 cm
- $255.2 \text{ cm} = 255.2 \times 0.01 \text{ m} = 2.552 \text{ m}$
- $4,620 \text{ m} = 4,620 \times 0.001 \text{ km} = 4.62 \text{ km}$

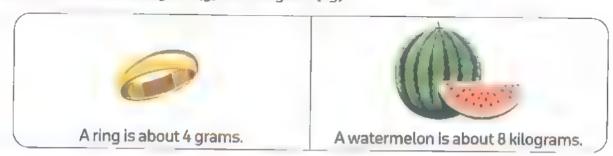


Notes for parents:

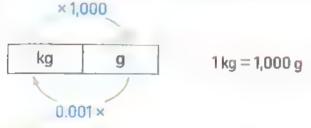
 Your child relate the metric system to the place value system and use decimals to represent equivalent measurements.

Metric units of mass

Metric units of mass are gram (g) and kilogram (kg)



Converting metric units of mass:



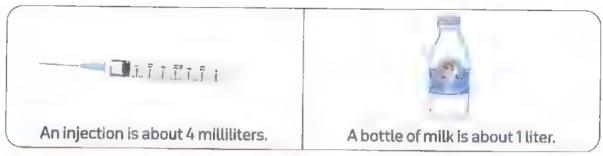
Unit of Measurement	In Grams	în Kilograms
Gram	1	0.001
Kilogram	1,000	1

For Example

- \bullet 4.56 kg = 4.56 × 1,000 gm = 4,560 g
- $567 \text{ gm} = 567 \times 0.001 \text{ kg} = 0.567 \text{ kg}$

Metric units of capacity

Metric units of capacity are liter (L) and milliliter [mL]



Converting metric units of capacity:



Unit of Measurement	In Milliliters	In Liters
Milliliter	1	0.001
Liter	1,000	1

For Example

- 12.4 mL = 12.4 \times 0.001 L = 0.0124 L
- 4.25 L = 4.25 × 1,000 mL = 4,250 mL
- Explain that, like our place value system, relationship in the metric system are based on 10 100, and 1,000, also known as powers of 10.

Example 1

Complete each of the following.

- a. 17.3 mm = ------ cm
- **c.** 45.8 cm = ----- m
- g. 0.043 L= ---- mL

Solution [19]

- a. $17.3 \text{ mm} = 17.3 \times 0.1 \text{ cm} = 1.73 \text{ cm}$
- c. $45.8 \text{ cm} = 45.8 \times 0.01 \text{ m} = 0.458 \text{ m}$
- **e.** $0.08 \text{ kg} = 0.08 \times 1000 \text{ g} = 80 \text{ g}$
- g. $0.043 L = 0.043 \times 1000 mL = 43 mL$

- b. 4,17 km = ---- m
- **d.** 0.15 m = mm
- f. 540 g = -----kg
- **b.** $4.17 \text{ km} = 4.17 \times 1000 \text{ m} = 4,170 \text{ m}$
- **d.** $0.15 \text{ m} = 0.15 \times 1000 \text{ mm} = 150 \text{ mm}$
- f. $540 \text{ g} = 540 \times 0.001 \text{ kg} = 0.54 \text{ kg}$
- h. $7,800 \text{ mL} = 7800 \times 0.001 \text{ L} = 7.8 \text{ L}$

Example 2

Compare, write (>, < or =) for each

- a. 50 mL 0.05 L
- c. 2400 mm 4.2 m

- **b.** 0.7 kg 697 g
- d. 350 cm 3.4 m

Solution [9]

- a. Since $50 \text{ mL} = 50 \times 0.001 \text{ L} = 0.05 \text{ L}$
- **b.** Since $0.7 \text{ kg} = 0.7 \times 1,000 \text{ g} = 700 \text{ g}$
- c. Since $2,400 \text{ mm} = 2,400 \times 0.001 \text{ m} = 2.4 \text{ m}$
- d. Since $350 \text{ cm} = 350 \times 0.01 \text{ m} = 3.5 \text{ m}$
- $So, 50 \, mL = 0.05 \, L$
- $So_{1}0.7 \text{ kg} = 700 \text{ g} > 697 \text{ g}$
- $So_{1}2,400 \text{ mm} = 2.4 \text{ m} < 4.2 \text{ m}$
- So, 350 cm = 3.5 m > 3.4 m

V

your understanding

Complete.

- a. 4.007 km = ____ m
- c. 452 cm = _____ m
- e. 2.7 L = ____ mL
- **g.** 2.73 kg = g

- **b.** 6,750 mL= ____ L
- **d.** 40 g = kg
- f. 4.21 m = ____ cm
- **h.** 450 mm = _____ m

Notes for parents:

 Explain that since metric measurements are related through powers of 10, it is possible to write measurements using decimals.

Exercise 27

on lessons 8&9

· Decimals and the Metric System

Measurement, Decimals and Powers of Trans

-	0		6.4	r.		74	0	47
	к	Ŀ	м	Ł	М	ы	ŀ	К

From the school book

Select the most appropriate unit of measurement from the given terms to measure the length of each object.

millimeters centimeters meters kilometers

- a. Pencil: Unit of measure
- b. Height of building : Unit of measure
- c. Length of dinner table: Unit of measure
- d. Length of the Nile River: Unit of measure
- e. Length of insect: Unit of measure ______

2. Complete.

d.
$$3.02 \text{ kg} = 3.02 \times =$$

i.
$$4437 \text{ kg} = 317 \times ------ \text{g}$$

k.
$$5.9 \text{ m} = 5.9 \times ----- = ----- \text{mm}$$

m. 8.657 m = 8.657
$$\times$$
 = cm \approx cm (to the nearest cm)

r.
$$15.6 \text{ kg} + 1,800 \text{ g} = ----\text{kg}$$



Choose the correct answer.

B. 108.7

D. 1.087

A. 0.3465

B. 3.465 C. 34.65 **D.** 346.5

cm

g

C. 700

e.
$$17.6 \text{ kg} =$$

A. 0.176

C. 1,760

$$f. 95 \, \text{mm} =$$

cm

C. 9,500

A. 1,962.9

A. 9.5

L

B. 196.29

C. 19.629

cm

A. 33

B. 330

C. 3,300

D. 33,000

A. 7,000

B. 70

C. 7

D. 0.7

$i. 694 \, \text{mm} =$

kg

A. 6,940

B. 69.4

C. 6.94

D. 0.694

k. 2.5 L = ----- mL

B. 250

C. 25

D. 0.25

l.
$$7.8 \, \text{cm} =$$

mm

A. 0.078

B. 0.78

C. 78

D. 780

Put (√) for the correct statement or (X) for the incorrect statement.

a.
$$4.1 \, \text{km} = 410 \, \text{m}$$

b. 32 mm = 3.2 cm

]

c.
$$0.08 \text{ kg} = 80 \text{ g}$$

d. 4 cm = 0.04 m

$$a = 400 a = 0.004 kg$$

f. 5.1 L > 510 mL

g.
$$400 \text{ g} = 0.004 \text{ kg}$$

h. $0.7 \, \text{m} = 700 \, \text{cm}$

, P	ut ((<)	, (>)	or	(=).
-----	------	-----	-----	----	----	------

a. 2180 cm	2.18 m	b. 0.41 kg	416 g
c. 5 mL	0.005 L	d. 24mm	0.24 cm
e. 0,088 m	8.7 mm	f. 7.1 L	715 mL
g. 8g	0.08 kg	h. 0.01 km	7 m

6 Order each of the following from least to greatest.

a. 0.75 kg	,	570 g	9	0.8 kg	,	790 gm	2	0.762 kg
b. 0.32 m	,	300 mm	,	31 cm	,	0.315 m	9	319 mm
c. 400.2 mL	,	0.35 L	,	427 mL	,	0.3 L	9	0.42 L

Study each problem. In each problem, mark whether the multiplication given to complete the conversion is correct. Select Y for yes and N for no. Then, complete all conversions by filling in each blank with the equivalent measurement (even if the conversion is incorrect).

= g	= cm	c. 230 cm – m 230 × 0.01 Y/N	=L
= cm	= km	g, 4 cm = m 4 × 0.01 Y/N] = L
= cm	= cm	k. 782 m = km 782 × 0.001 Y/N	=m
= cm	=m	o. 6,410 m =	= m
= — g	= mm	s. 0.8 cm = mm 0.8 × 0.1 Y/N	=cm
= cm	= m	w. 0.97 kg = g 0.97 × 1,000 Y/N	= m

- There are two categories of weightlifting: The Snatch and the Clean and Jerk. World Champion Egyptian weightlifter Mohamed Ehab wants to compare his personal best in these two categories. In the Snatch, he was able to lift 173 kilograms. He was able to lift 201,000 grams in the Clean and Jerk. Use multiplication and powers of 10 to explain which measurement is greater.
- Yousra is a veterinarian. She needs to weigh a cat to see if it is healthy.
 Yousra records that the cat weighs 3.648 kilograms. Her assistant records that the cat weighs 3,648.0 grams.

Do you agree with Yousra or her assistant? Why?



Choose the correct answer.

- 1. 40 g
- 0.04 kg
- A. >

B. <

- C. =
- 3. 5.6 cm = _____mm
 - A. 56
- **B.** 0.56
- C. 560
- **D.** 5600
- 5. 3.5 L 1500 mL = _____ L
 - A. 2

- B. 20
- C. 200
- D. 2000

- 2. Which of the following is the greatest?
 - A. 2700 mm
- B. 3 m
- C. 0.002 km
- D. 285.8 cm
- 4. 4.7 mL = _____ L
- A. 0.047
- B. 0.47
- C. 4700
- **D.** 0.0047
- 6. 1.62 m
 - A. >

В. <

1,619 mm

C. =

- 7. $4.61 \, \text{m} =$
 - A. 46.1

cm

- C. 4610
- B. 461D. 46100

kg

- 8. 18.14 mm =
 - A. 0.1814
- B. 181.4

cm

- C. 1.814
- D. 1814

- 9. 14.12 kg 100 g =
 - A. 14.012
- B. 1.412
- C. 14.02
- D. 141.2
- **10.** 740 m = km
 - A. 7.4
- B. 0.74
- C. 7400
- D. 74
- How many liters of water does he need? Select the multiplication problem that could be used to answer the question.
 - A. $4,230 \times 1,000$
 - C. $4,230 \times 100$

- **B.** 4,230 × 0.01
- **D.** 4,230 × 0.001

10

Solving Multistep Story Problems



Learn

How to solve multistep story problems?



- Read the story loudly more than one time carefully.
- Identify the details and quantities given.
- Identify the hidden question (if exists).
- Search for key words.



- Decide the operation (+, -, ×, ÷).
- Decide the strategy you can use to solve the problem.



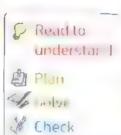


- Solve the hidden question (if exists).
- How can you use the strategy to solve the problem?



Check

- How do you know your answer is correct?
- What other strategy could you use to solve the problem?













Amira went to the supermarket, she bought 1.5 kg of tomato, 875 g of peas, 0.09 kg of spices and 2,750 g of cucumber. Find the weight (in grams) of what Amira bought.

Notes for parents:

 Remind your child that multistep problem is a problem that involves more than one operation.

Solution [11]

This example wants to find the weight (in grams) So, we convert each kilogram

into gram before adding.

1.5 kg tomato = $1.5 \times 1,000 \text{ g} = 1,500 \text{ g}$

 $0.09 \text{ kg spices} = 0.09 \times 1,000 \text{ g} = 90 \text{ g}$

So, the total weight

= 1,500 + 875 + 90 + 2,750 = 5,215 q

Notice that

If you convert to grams, you would use more whole numbers, meaning the calculations would involve larger numbers. If you convert to kilograms, you would use more decimals. No matter to what unit you convert, the sum is the same but given in different units.

Example 2

Sandy bought 450 mL of mango juice. Her sister Marvina drank 0.26 liter. What is the remaining quantity of the mango juice?

Solution 🕎

Since 0.26 liter = $0.26 \times 1,000 \text{ mL} = 260 \text{ mL}$ So, the remaining quantity = 450 - 260 - 190 mL



Example 3

A trousers factory needs 1.12 m of fabric to produce one trousers. If the factory plans to produce 48 trousers and the fabric roll contains 2,000 cm. of fabric, how many rolls does the factory need? And how long is the remaining part?

Solution [🔮

The fabric needed to make 48 trousers = 48×1.12 m = 53.76 m Each fabric roll contains 2,000 cm = $2,000 \times 0.01$ m = 20 m Since $[20 \times 2 < 53.76 < 20 \times 3]$ So, the number of rolls needed = 3 rolls

The length of fabric in 3 rolls = $3 \times 20 = 60$ m

The remaining part = $60 - 53.76 = 6.24 \,\text{m}$



your understanding

Youssef wants to know how much he has grown this year. In January, he was 141.8 cm. By the end of the year, he was 1.6 meters tall. How much did Youssef grow this year?

Ask your child what strategy he/she decided to use, and why he/she chose it.

Exercise 28

Surring Mullistep Strony Problems

on lesson 10

REMEMBER

55 715

O AFFRUT

ROBLEM SOLVING

From the school book

- If the heights of Nada, Habiba and Sara are 1.22 m., 124 cm and 1,230 mm.
 , what is the total of their heights?
- 2. If Nader's weight at the beginning of a year is 34.1 kg and his weight at the end of the same year is 32,460 g, how much weight did Nader lose?
- 3. Mohamed bought 12 bottles of orange juice each contains 640 mL. Ibrahim bought 7 bottles of mango juice each contains ¹/₂ liter.
 How many liters do they have together?
- 4. The length of a fabric roll is 4.56 m. A piece of length 114 cm is taken to make a blouse and another piece of length 980 mm to make a skirt. How long is the remaining part?
- 5. Marwan is a computer engineer. The computer he is repairing is currently in three pieces that have a mass of 2 kilograms, 600 grams and 0.03 kg. His manager is waiting for the last piece, which has a mass of 1,750 g to arrive. What will the mass of the computer be when it is completely assembled?
- 6. Rania is a nurse in a hospital. She is getting wrap bandages from the storage closet for her patients. She needs 1.35 meters of bandages for each of her 4 patients. There are 250 centimeters in each package.

How many packages does she need?

How many, if any, will be left over?

- 7. Dalia made a liter of sugar cane juice. She drank 320 milliliters. Her father drank 0.25 liters.

 How much sugar cane juice is remaining?
- a. Ehab wants to know how much he has grown this year. In January, he was 138.2 centimeters. By the end of the year, he was 1.5 meters tall.
 How much did Ehab grow this year?

b. Ehab's twin sister Eman also wants to know how much she grew. In January, she was
 1.34 meters. At the end of the year, she was 145 centimeters.

Who grew more, Ehab or Eman?

How much more?





Find:

- a. The difference in perimeter of the two rectangles.
- b. The difference in area of the two rectangles.
- 10. Marwan is designing a new circuit board for the computer he is repairing. The old circuit board measured 7.25 centimeters by 36 millimeters. He planned for the new circuit board to be 80 mm by 5.5 cm.

What is the difference in area of the circuit boards?



Concapt.

Dividing Decimals

The small intestine is

about 65 m long.

If the height of a child is 25 m, how many times is the length of the small intestine as the height of the child?

-	11					
Lessons	Dividing by Powers of Ten	Students will explain patterns they observe when dividing by powers of ten.				
11 & 12	Patterns and Relationships in Powers of Ten	Students will make connections between multiplying and dividing by powers of ten.				
Lessons	Modeling Decimal Division	Students will explain meaning of decimal division problems. Students will use models to represent decimal division.				
13 & 14 Estimating Decimal Quotients		Students will estimate quotients of decimal division problems.				
Lessons	Dividing Decimals by Whole Numbers	Students will use the standard algorithm to divide decimals through the Thousandths place. Students will use estimation to check the reasonableness of their answers.				
15 & 16	Dividing Decimals by Decimals	 Students will use the standard algorithm to divide decimals through the Thousandths place. Students will use estimation to check the reasonableness of their answers. 				
Lesson 17	Solving Challenging Multistep Story Problems	Students will solve multistep story problems involving addition, subtraction, multiplication, and division of decimals.				

Lessons

- · Dividing by Powers of Ten
- · Patterns and Felationships in Powers of Ten

How to divide a number by powers of 10

A school has 350 pupils distributed among 10 calsses.

How many pupils are in each class?

Numbers of pupils in each class = 350 ÷ 10
= 35 pupils

How do you divide a number by a power of 10?



For Example

- 14.36 ÷ 10 = 1.436
- $0.05_{\odot}87 \div 100 = 0.0587$
- 25600 + 1,000 = 25.6
- $78,36 \div 0.1 = 783.6$
- 239.80 ÷ 0.01 = 23980
- $0.0063 \div 0.001 = 6.3$

Move the decimal point to left

Move the decimal point to right

Notice

It is possible to put zeroes on the left of the whole part or zeroes on the right of the last digit of the decimal part without changing value of the number.

For Example

• 000235,36000

• UUU235.36UUU

• 000736.0000....

Notes for parents:

 Remind your child that when dividing by 10,100, or 1000, move the decimal point one place to the left for each zero in the divisor.

273

10-12-42

Example 1

Find the result of each of the following.

e.
$$7.389 \div 0.1 =$$

b.
$$1736.8 \div 10 =$$

d.
$$6532 \div 1000 =$$

f.
$$8.3 \div 0.001 = ---$$

Solution [9]

a.
$$745936 \div 100 = 7.4536$$

c.
$$2385_{\odot}00_{A} \div 0.01 = 238500$$

e.
$$7_{\odot}3.89 \div 0.1 = 73.89$$

b.
$$173 \beta_{\odot} 8 \div 10 = 173.68$$

f.
$$8_{\odot}300 + 0.001 = 8300$$



30



your understanding

Find each of the following.

a.
$$89.36 \div 0.01 =$$

b.
$$256 \div 0.001 =$$

Notes for parents:

• Remind your child that he/she may need to insert zeroes. For example, $6.87 \div 100 = 0.0687$.

Dividing and multiplying by the powers of ten

For example.

•
$$235,87 \div 0.1 = 2358.7$$

$$235.87 \times 10 = 2358.7$$

$$= 235.87 \div 0.01 = 23587$$

$$, 235.87 \times 100 = 23587$$

•
$$235.870 \div 0.001 = 235870$$
 , $235.870 \times 1000 = 235870$

$$, 235.870 \times 1000 = 235870$$

For example:

$$235.87 \times 0.1 = 23.587$$

$$235.87 \times 0.01 = 2.3587$$

•
$$235.87 \div 1,000 = 0.23587$$

•
$$235.87 \div 1,000 - 0.23587$$
 , $235.87 \times 0.001 - 0.23587$

Example 2

Without calculation join problems of the same result:

 $785.6 \div 0.1$

 785.6×0.1

 $785.6 \div 0.01$

 785.6×10

 $785.6 \div 1000$

 785.6×0.01

 $785.6 \div 10$

 $785.6 \div 0.001$

 $785.6 \times 1,000$

785.6 × 0.001

Make sure that your child understand that dividing by 0.1, 0.01, or 0 001 is equivalent to multiplying by 10, 100, or 1000

Solution []

$$785.6 \times 0.1$$

$$785.6 \times 10$$

$$785.6 \times 0.001$$

Example 3

Complete each of the following.

Solution [



c.
$$258.7 \div 0.001 = 258700$$

$$g. 45.38 \times 0.1 = 4.538$$

d.
$$83.67 \times 100 = 8367$$

f.
$$34.56 \div 0.01 = 3456$$



your understanding

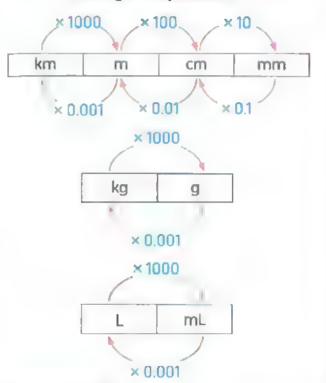
Use multiplication to find the same result of each of the following.

Notes for parents:

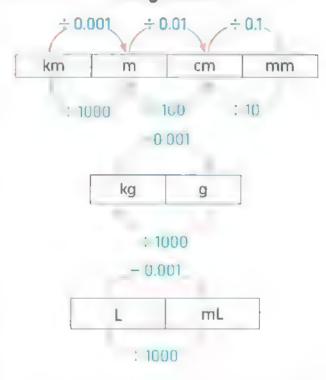
 Ask your child to explain when it is important to insert zeroes when moving the decimal point to the left or to the right.

Matric conversions is th Multiple and Division

Using multiplication



Using division



Example 4

Complete each conversion then write a multiplication equation and a division equation with the same answer.

b.
$$700 g = kg$$

Solution (*)

$$512 \times 0.01 = 5.12$$

$$512 \div 100 = 5.12$$

b.
$$700 g = 0.7 kg$$

$$700 \times 0.001 = 0.7$$

$$700 \div 1000 = 0.7$$

$$2345 \times 0.001 = 2.345$$

$$2345 \div 1000 = 2.345$$

V (2.12)

your understanding

Complete using multiplication and division to get the same result.

Ask your child to explain when he/she multiply or divide to convert from larger unit to smaller unit, and from smaller unit to larger one.

on lessons 11 & 12

REMEMBER



From the school book

1. Find each of the following.

a.
$$2,500 \div 1 =$$

$$2,500 \div 0.1 =$$

$$2.500 \div 0.001 = -$$

$$800 \div 0.1 = -$$

$$d.783 \div 10 =$$

$$783 \div 0.01 =$$

$$783 \div 0.001 =$$

$$235.68 \div 0.1 =$$

$$235.68 \div 0.01 =$$

$$235.68 \div 0.001 =$$

$$f. 8.7 \div 10 = -$$

$$8.7 \div 100 =$$

$$8.7 \div 1000 =$$

$$8.7 \div 0.1 =$$

$$8.7 \div 0.01 =$$

2. Find quotient of each of the following.

a.
$$11.32 \div 10 =$$

d.
$$= 5.7 \pm 0.1 =$$

i.
$$12.8 \div 0.01 =$$

m.
$$0.736 \div 0.1 =$$

p.
$$102.3 \div 0.01 =$$

e.
$$23 \div 1000 =$$
 _

k.
$$0.4 \div 0.001 =$$

f.
$$1112.16 \div 0.01 = -----$$

3. Complete.

e.
$$\div$$
 1000 = 253

d.
$$\div 0.01 = 567$$

Solve the following problems, then draw lines between problems with the same answer.

$$510.05 \times 0.01 =$$

$$510.05 \times 0.1 =$$

5. Complete each equation with the correct power of 10. Be sure to look carefully at the given operation.

d.
$$65 \times = 6,500$$

$$9.102 \div = 910.2$$

$$0.39 \div = 0.039$$

$$28.4 \div = 0.284$$



Without calculation match problems of the same answers.

- a. 2.35 : 0.01
- b. 2.35 ÷ 10
- c. 2.35 ÷ 0.1
- d. 2.35 ÷ 1000



$$2.35 \times 10$$

7. Complete.

a.
$$89.36 \div 100 = 89.36 \times$$

c.
$$0.005 \div 0.01 = 0.005 \times$$

e.
$$2.732 \times 0.1 = 2.732 \div$$

b.
$$7.5 \div 0.01 = 7.5 \times$$

f.
$$25600 \times 0.01 = 25600 \div$$

h.
$$600.5 \times 10 = 600.5 \div$$

8. Put (< , = or >).

c.
$$73.6 \times 0.1$$

d.
$$253 \times 0.01$$

g.
$$506.2 \div 10$$

g. $\coprod 5,200 \, \text{mm} = m \mid h.125 \, L = mL$

9. Complete each conversion. Then, write a multiplication equation and a division equation with the same answer.

763.4 ÷

cm

10. The price of one chocolate bar is 5.25 LE, find the price of 100 bar of chocolate.

11. A box contains 10 bars of soap each of weight 125 g, find the weight of the 10 bars in kg.

12. Tony walks 725 m per day what is the total covered distance in 10 days.

13. 2.5 Liter of juice wanted to be poured into glasses of capacity 250 mL. Find the number of needed glasses.

14. Temperatures must reach at least 1,100°C for glass to be blown or for earthenware clay to harden. Water boils at about one-tenth of that temperature. Select the choice that is closest to the temperature at which water boils.



Choose the correct answer.

- 1. 6.3 × 100 = ____
 - A. 0.063
- **B.** 6300
- C. 6.300
- D. 630

- **2.** 783.5 × ____ = 7835
 - A. 0.1
- B. 0.01
- C. 10
- D. 100

- 3. - × 0.01 = 5.36
 - A. 0.536
- **B.** 536
- C. 53.6
- D. 5.3600
- 4. $7.38 \times 0.1 =$
 - **A.** 7.38×100
- **B**. 73.8
- C. $7.38 \div 10$
- D. 0.0738

- 5. One hundredth of the number 76.93 =
 - A. 76.93 ÷ 0.01
- B. 76.39 ÷ 100
- C. 769.3
- D. 7693

- **6.** 5200 g = ____ kg
 - A. 52
- **B**. 5,200,000
- C. 5.2
- D. 0.052

- 7. 30.5 km = ' m
 - A. 30,500
- B. 30.5000
- C. 305
- D. 3050
- 8. 0.735 L=
- mL
- A. 735
- **B**. 7.35
- C. 73.5
- **D**. 7350

- Height of a building of ten floors where the height of each floor
 - 280 cm is
- m
- A. 2,800
- **B.** 280
- C. 28
- D. 2.8
- 10. A wooden bar of length 7.75 m is divided into 10 pieces of equal length, then length of each piece = ____ cm
 - A. 0.775
- B. 77.5
- C. 775
- **D.** 7.75





- Madeling Decimal Division
- Estimating Decimal Quatients

Remember

How many groups or how many in each group?

 Mr Sameh wants to distribute 40 pupils in the class into 5 groups.

How many pupils are in each group?

 Mr Hany wants to distribute 40 pupils in the class into groups each consists of 5 pupils.

How many groups are there?









Total number Number of pupils Number of in each group equal groups

, then you deduce that

Division can be used to find

How many groups? Or How many in each group?

Example 1

Read the following story problems, then determine whether the quotient represents How many groups or how many in each group?

- a. Tony has a wooden bar of length 13.5 m he makes a photo frams each needs 4.5 m of How many photo frams can Tony make?
- b. Monica has 24.8 litre of water, she wants to distribute them equally among 4 vessels. What is the quantity of water in each vessel?

Solution [V



- a. How many groups?
- b. How many in each group?

Notes for parents:

Ask your child to determine the meaning of a division story problem.



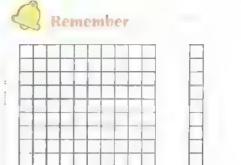
Modeling decimal division

Use base 10 blocks to model the following division problem.

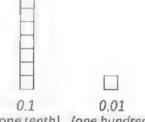
 $1.2 \div 0.4$

The quotient is how many groups of 0.4 are there in 1.2

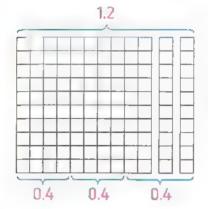
You can model this as the following.



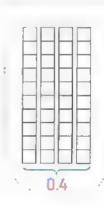
1 (one whole)

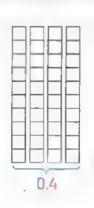


(one tenth) (one hundredth)









, then there are 3 groups each of 0.4 in 1.2 $1.2 \div 0.4 = 3$

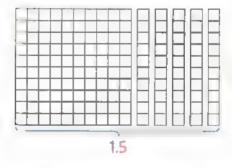
Example 2

Model the following division problems to find the quotient.

Solution [7]

a.
$$1.5 \div 0.5 =$$
 ———

The quotient is how many groups of 0.5 are there in 1.5









, then there are 3 groups each of 0.5 in 1.5.

$$1.5 \div 0.5 = 3$$

Help your child use models of represent decimal devision.

The quotient is how many in each group and number of groups are 4



, then there are 45 hundredth in each group

$$1.8 \div 4 = 0.45$$



your understanding

Model the following division problems to find the quotient.

Notes for parents:

• Remind your child that the devision can be used to find how many groups or how many in each group.

Estimating decimals quotient

$$18.25 \div 5 =$$

- The divisor is whole number "not necessary to change".
- Look for a number that is compatible with 5 and close to 18.25 say 20 or 15

 $20 \div 5 = 4 -$

4 is overestimate because estimated number of dividend 20 is greater than the actual dividend 18.25

 $15 \div 5 = 3$

3 is underestimate because estimated number of dividend 15 is less than the actual dividend 18.25

The dividend increase

The quotient increase

The divisor increase

The quotient decrease

The dividend decrease

The quotient decrease

The divisor decrease

The quotient increase

Example -

Estimate the quotient of 61.25 ÷ 7.85 by rounding the divisor and dividend to nearest compatible whole numbers.

Solution [



dividend increase

dividend decrease

underestimate

your understanding

Estimate the quotient for each expression by rounding the divisor and divident to the nearest compatible whole numbers.

a. 30.15 + 6 -

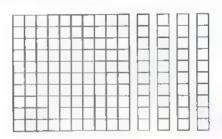
b. 40.84 ÷ 6.25 -

c. $24.18 \div 4.8 -$

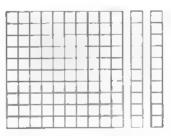
d. $45.27 \div 5.2$

Estimating quotients helps your child check his/her work and determine his/her answer is reasonable

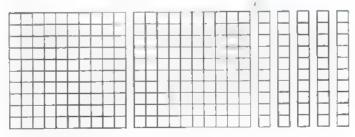
- REMEMBER
- ♠ 1 fc → 500
- CARRY
- ROBLEM SOLVING
- From the school book
- 1. Read each story problem. Determine whether the quotient represents how many groups or how many in each group.
 - a. Amal had 4.32 meters of string. Each bracelet she makes uses 0.96 m of string. How many breacelets can Amal make?
 - b. Amir and his mother traveled 134.4 kilometers over 3 days, traveling the same distance each day. How many kilometers did Amir and his mother travel in 1 day?
 - c. Five bakers shared 8.9 kilograms of sugar equally. How much sugar did they each receive?
 - d. A rope that is 8.9 meters long is cut into 3 equal pieces. How long is each piece?
 - e. Hoda is making hair bows. She has 5.6 meters of fabric. Each hair bow is made from 0.34 m of fabric. How many bows can hoda make?
 - f. A team of workers construct 0.75 kilometers of road each day. How long will it take them to construct 26.8 km of road?
 - g. Kamel has a 6.83 kilograms bag of peanuts. He split the peanuts evenly into 5 bags.
 What is the weight of each bag of peanuts?
- 2. Use the shown models to write the quotient for each division.
 - a. $1.4 \div 0.7 =$



b. 1.2 ÷ 0.2 = _____



c, 2.5 ÷ 5 = ____



Use your Base 10 blocks to model the problem. Write the quotient for each division.

Without doing the calculation, determine whether each student's estimate is an overestimate or underestimate of the exact answer.



overestimate or underestimate

b. Problem



Estimate

overestimate or underestimate

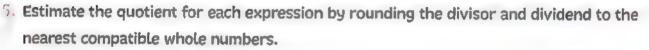
c. Problem

$$3.915 \pm 436 =$$



$$4,000 \div 400 = 10$$

overestimate or underestimate



d.
$$34.98 \div 5.94$$



g. 1 45.35 ÷ 5.3

My Estimate:

h. $97.81 \div 8.92$

My Estimate:

i. $118.45 \div 6.32$

My Estimate:

i. 519.72 ÷ 19.72

My Estimate:

k. - 18.52 62.31

My Estimate:

L. (a. 21)492.7

My Estimate:



Emad, an electrician, is the project manager for an upcoming construction project. He needs your help finding estimates for various projects on site. Read through each problem and estimate the answer.



Building construction

- a. A team of workers excavates 15.84 cubic meters [m³] of dirt each hour. How long will it take them to excavate 78.1 m³ of dirt?
- b. The frame of the building will be made of 25.3 metric tons (t) of concrete and 52.8 t of steel. What is the total mass of the frame of the building?
- c. Each floor of the building needs 28.3 meters of plastic piping. The team has a total of 314.58 m of piping. How many floors can they fit with the piping?
- d. Each steel joist can support 224.6 kilograms of weight. How much weight can 10 steel joists support?
- e. The team has a total of 668.7 meters of electrical wiring for the building they are constructing. If each floor receives the same amount of wiring, how much wiring can they put on each of the 9 floors?
- f. The building code requires there to be a window every 4.3 meters apart. If the front of the building is 38.9 m long, how many windows will there be?

Choose the correct answer.

1. 98.19 ÷ 21.03 estimate:

A. 3

B. 5

C. 6

D. 7

2. $1.5 \div 0.3 =$

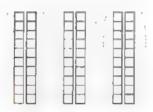
A. 4

B. 5

C. 6

D. 7

3.



This model represents

A. $6 \div 2 = 3$

B. $0.6 \div 0.2 = 3$

C. $60 \div 20 = 3$

D. $6 \div 0.2 = 30$

4. Problem: 3,946 ÷ 451

Estimate: $4,000 \div 400 = 10$

is

A. Overestimate

B. Underestimate

5. A rope that is 16.1 meters long is cut into 4 equal pieces. Estimate how long is each piece?

A. 3

B. 4

C. 5

D. 6

6. 49.1)156.6

estimate:

A. 3

B. 4

C. 5

D. 6

7. 2.6 ÷2 =

A. 1.2

B. 1.3

C. 1.4

D. 0.13

8. 201.09 ÷ 9.88

estimate:-

A. 10

B. 15

C. 20

D. 25

9. Sandy has a 8.5 kilograms bag of peanuts. She split the peanuts evenly into 5 bags. What is the weight of each bage of peanuts?

A. 1.6

B. 1.7

C. 1.8

D. 1.9

10. $3 \div 0.5 =$

A. 1.5

B. 3

C. 4.5

D. 6



- Inplant Decimals by Whole Numbers

Dividing Decimals by Decimals



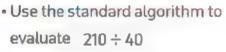
Loarn 1 Dividing decimals by whole numbers

Nana has 210 kg of sugar, she wants to distribute them equally among 40 bags.

What is the weight of sugar in each bag?

The answer of this problem must not include remainde:

How can you evaluate 210 ÷ 40?



5 2 5

, then the quotient is 5 and the remainder is 10 which is not enough to be divided by 40, so we regroup 10 ones to be divisible by 40 as the following steps:

The steps of standard algorithm Divide Multiply Subtract Compare Bring down Repeat this order until the division is completed.

	0.20
Place a decimal point to the right of	40 2 1 0. 0 0
ones place in the dividend (210.)	- 200

 Place a decimal point in the quotient directly above the decimal point in the dividend, then bring down the zero which in the tenth place.

Complete the other steps of the standard algorithm.

- You can check the reasonableness with compatible number as $200 \div 40 = 5$ and 5.25 is close to 5
- You can check the answer by multiplication : $5.25 \times 40 = 210$

Notes for parents:

 Let your child remember the steps of standard algorithm: Divide, multiply, subtract, compare, and bring down. Repeat until the devision is complete.



Example 1

Find: $155 \div 50$

- The answer includes a remainder
- The answer does not include a remainder

Solution [V]



- The answer includes a remainder
- The answer does not include a remainder

, then
$$155 \div 50 = 3 R5$$

- 1 5 5.0 150 0.0
- then $155 \div 50 = 3.1$

Infinite division

How can you evaluate 5.5 ÷ 3 to the nearest hundredth?

- Notice that in this case, the operation of division is infinite, so we call it infinite division.
- You can go on the operation of division, but you need the result of division rounded to the nearest hundredth, so only divide until you reach three decimal places, then use the rules of rounding. then, $5.5 + 3 \approx 1.83$ to the nearest hundredth.
- 1.833 5.500 -24 10

- The quotient of this problem is a repeating decimal.
- You can check the reasonableness with compatible number as $6 \div 3 = 2$ and 1.833 is close to 2

Example 2

Use the standard algorithm to find the quotients of each of the following make sure that your answer does not include a remainder.

Remind your child that placing a decimal and a zero to the right of ones place in the dividend does not change its value.

Solution [

, then
$$58.05 \div 15 = 3.87$$

, then 223.1 ÷ 9 ≈ 24.79

to the nearest hundredth.

$$\frac{-280}{200}$$

, then 3:40=0.075

then $1.21 \div 6 \approx 0.202$

to the nearest thousandth.



your understanding

Use the standard algorithm to find the quotients of each of the following.

Notes for parents:

· Your child might misplace the decimal point in the quotient in relation to the decimal point in the dividend.

Dividing decimals by decimals

To divide by a decimal, you can use the same way of dividing whole numbers, by writing the divisor as a whole number.

Do this by multiplying the divisor and the dividend by 10,100,1000, ... ect. according to the number of places of the decimal part of the divisor.

For Example

Divide: 23 ÷ 0.4

To divide 32 by 0.4, multiply the divisor by 10 (to change it into a whole number), and then multiply also the dividend by 10

$$0.4 \times 10 = 4$$
 and $32 \times 10 = 320$

Notice

You can move the decimal point in the dividend by the same number of places that you need to move the decimal point in the divisor to make the divisor a whole number.

For Example:

$$-3_{\odot}2 \div 0_{\odot}4 = 32 \div 4 = 8$$

$$0.042 \div 0.07 = 42 \div 7 = 6$$

$$\cdot 2_{\circ}72 \div 0_{\circ}8 = 27.2 \div 8 = 3.4$$



Romark

You may need to add a zero (or more) to the right of the dividend so that you can move the decimal point.

For Example

$$14.1 \div 1.41 = 14.10 \div 1.41 = 1410 \div 141 = 10$$

Example 3

Find the quotient of each of the following:

Remind your child that he/she can place one zero or more to the right of the last decimal place of the number without changing its value

Solution [

a. The quotient = $29.76 \div 6.4$

The divisor has one decimal place. So, the decimal point moves one place to the right in both, the divisor and the dividend.

: Divide by using standard algorithm

		Di	af	1		
				4.	6	5
64)		2	9	7.	6	0
	_	2	5	6		
			4	1	6	
	_		3	8	4	
				3	2	0
	_			3	2	0
				0	0	D

b. The quotient = $0.1134 \div 0.18$.

$$= 0.63$$

000

Example 4

Estimate the quotient of the following, then compare your estimation with the acutal quotient: 2.016 ÷ 0.84

Solution [V]



Since: $2.016 \approx 2$ and $0.84 \approx 1$

then: The estimated quotient is: $2 \div 1 = 2$

$$50,2.016 + 0.84 = 201.6 \div 84$$

= 2.4 [The estimation is acceptable.]



0.00



your understanding

Find the quotient of the following:

a.
$$34.4 \div 0.4$$

Notes for parents :

Remind your child how he/she divide two numbers using standard algorithm.

31

on lessons 15&16

e. 2.2) 2 6. 4

Estimate:

Quotient: -

· Dividing Decimals by Whole Aumiers

Dividing Decimals by Decimals

	REMEMBER	(*(-(-**(-)		- PROBLEM	SOLVI	NG	de.	From the school	book
Ŀ	Complete each of the following as in expample (a).								
	a. $3.5 \div 0.5 = 35$	÷5 =7		b	. 4.7	2 ÷ 0.7 = .		_=	
	c. 3.6 ÷ 0.4 =	- 4	= _	[d	. 0.2	28 ÷ 0.04 =		= =	
	e. 7.2 ÷ 0.8 =		_=_	. E	76.	5 ÷ 7.65 =	_	<u> </u>	_
	g. 0.33 ÷ 0.11 =	-	=-						
2.	Find quotient of	each of the	following						
- 3	a. 2.64 ÷ 0.2	- 1	b. 4.	B6 ÷ 0.9		1	c. 2	.67 ÷ 1.2	
	d. 4.384 ÷ 0.32		e . 0.	1932 ÷ 0.92	2		f. 1.	155 ÷ 0.35	
	g. 357 ÷ 0.7	1	h. 3.	375 ÷ 0.15		1	i. 7.	7728 ÷ 0.64	
3.	Without doing the division, estimate the quotient in each of the following.								
	a. 8.018 ÷ 0.19			b. 6.235 ÷ 0.58					
	c. 0.1932 ÷ 0.92		d. 77.428		428 ÷ 6.94				
4.	Estimate the q								
	a. 5) 51.65	Estimate: Quotient			b.	6)73.0	- {	stimate:—— Quotient:	
	c. 16) 6 2, 2 4	Estimate: Quotient		- -	d.	30 5 8 9.	E	stimate: ———	

f. 0.4, 9 9

Estimate: ---

Quotient:

			7	
g.	0.	04	11.	5

اللبات حسما

Estimate:
Ouotient:

h. 1.9 9. 9 5 6

Estimate: — Quotient:

i. 0.05 1. 4 3

Éstimate :

j. 7.3 3.431

Estimate: —
Quotient:

k. 0.5, 4.4

Estimate:
Quotient:

L 0.04) 0. 5 1

Estimate: — –

m. 0.7.70

Estimate:
Quotient:

n. 0.5 0.9 1

o. 0.04) 5 7. 6

Estimate: — Quotient:

p. 0.5) 1. 3

Estimate:

Ouotient:

5. Find the quotient of each of the following to the nearest tenth.

6. Find to the nearest hundredth the quotient of each of the following.

7. Carry out each of the following.

a. $8.5 \div 2.7$

b. 13.029 ÷ 0.52

c. 28.448 ÷ 1.2

d. 45.862 ÷ 3.5

[rounded to the nearest tenth]

(rounded to the nearest hundredth)

(rounded to the nearest tenth)

[rounded to the nearest thousandth]

- 8. Put the suitable relation (<, = or >) in the blanks.
 - a. $38.12 \div 0.25$
- $3.812 \div 2.5$
- **b.** $55 \div 1.1$
- $55 \div 0.11$

- c. $462.3 \div 0.23$
- $4623 \div 2.3$
- d. $756 \div 5.4$
- 75.6 ± 0.054

- e. 0.46 ÷ 4.6
- 0.01

- f. $53.7 \div 3.5$
- $5.37 \div 0.35$

- q. $845 \div 4.9$
- $84.5 \div 49$
- 9. Complete.
 - $a. 2 \pm 0.3 \approx$

[to the nearest hundredth]

b. 5 ÷ 1.1 ≈

(to the nearest hundredth)

c. 7 ÷ 1.2 ≈ -

(to the nearest tenth)

d. $50.3 \div 0.6 \approx -$

[to the nearest thousandth]

e. 39 days ≈

weeks.

f. 254 hours ≈ days.

q. 67 months =

10. Evaluate the student's work below. Explain the error (or errors) the student made. Then, perform the division correctly to find the quotient.

Divide: 0.3 7 7. 4 3

Student's work: $77.43 \div 0.3$ will have the same quotient as $7.743 \div 3$

2.581

- 11. Use the standard algorithm to find the quotients. Make sure that your answer does not include a remainder. (or stop dividing at the thousandths place) Check your answer for reasonableness.
 - 1. Reda works as a plumber. He has 150 meters of copper pipe that he needs to cut into 40 equal-sized smaller pipes. How long will each pipe be?
 - 2. The city council is beautifying the city by planting trees along the roadside. The road is 2,050 meters long and the council has 75 trees which they are spacing an equal distance apart. What is the distance between each tree?

4. Dalia wants to pour 20 liters of hibiscus equally into 50 cups. How much hibiscus (in liters) will be in each cup?

- 5. The length of a roll of cloth is 59.5 metres. It was divided into equal parts where the length of each part is 3.5 metres. Find the number of these parts.
- A train covered a distance of 221.65 km in 2.5 hours. Calculate the distance it covers in one hour.



- A building has the height of 42 meters. If the height of each floor is 2.8 meters, then find the number of floors.
- 8. The area of a rectangle is 9.43 cm², and its width is 2.4 cm. Find its length and approximate it to the nearest hundredth of centimetre.

Challenge

- 12. Given that : $2752 \div 43 = 64$, then find mentally.
 - a. 2752 ÷ 4.3

b. 27.52 ÷ 4.3

c. 275.2 ÷ 0.064

- **d.** 2.752 ÷ 43
- 13. Given that : $46 \times 57 = 2622$, then find mentally.
 - **a.** 26.22 ÷ 0.57

b. 26.22 ÷ 4.6

c. 262.2 ÷ 5.7

d. 262,2 ÷ 0.46

e. 26.22 ÷ 0.057

f. 2.622 ÷ 0.46



Multiple Choice governors

Choose the correct answer.

(to the nearest hundredth)

(to the nearest week)

$$4623 \div 2.3$$

43 days ≈

weeks.

B. 5

A. 0.8

10. 224.38 ÷ 65 =



Solving Challenging Multistep Story Problems



Learn

How to solve multistep problems?

Here are some guided steps you may use when solving story problem.



Read to understand



的 Plan



Solve Solve



Example 1

Nader has 15 liters and 250 milliliters of mango juice he wants to distribute the juice into 4 large cups each cup has capacity of 0.75 liter and the rest should be distributed into small cups, each small cup has capacity of 350 milliliters.

Find the greatest number of the small cups can be used?

Solution [88]

- Nader has 15 liters and 250 milliliters = 15.25 L of juice
- The capacity of 4 large cups = 4 × 0.75 = 3 L
- The remaining quantity of juice = 15.25 3 = 12.25 L
- The number of small cups = $12.25 L \div 350 mL$

 $= 12.25 L \div 0.35 L$

 $= 1225 \div 35 = 35 \text{ cups.}$

Example 2

The mass of a bag contains 3 identical books is 2.125 kg. If the number of books inside the bag becomes 4 times the original number, the mass of the bag becomes 5.05 kg. Find the mass of the empty bag?

Solution [7

- The mass of the bag + 3 identical books = 2.125 kg
- · If the books becomes 4 times, then the number of books becomes $4 \times 3 = 12$ books.
- The mass of the bag + 12 identical books = 5.05 kg.
- Then the mass of 9 identical books = 5.05 2.125 = 2.925 kg

Notes for parents:

 Remind your child that multistep problem is a problem that involves more than one operation.



- And so the mass of one book = $2.925 \div 9 = 0.325$ kg and the mass of 3 books = 3×0.325 kg = 0.975 kg
- So, the mass of the empty bag = 2.125 0.975 = 1.15 kg

Example 3

There is an offer in a supermarket, the price of a sugar bag is 12.85 pounds and there are 2 more bags for free if a customer bought 6 bags of sugar. A person wants to buy 93 bags of sugar. How many pounds should be pay (given that the free bags will be counted).



Solution [

The price of 6 sugar bags = $6 \times 12.85 = 77.10$ pounds so the price of a pack [8 sugar bags] = The price of 6 bags + 2 bags for free = 77.10 pounds.

The number of packs the person needs = $93 \div 8 = 11.625$ packs.

The price of 11 packs $[11 \times 8 = 88 \text{ bags}] = 77.10 \times 11 = 848.10 \text{ pounds.}$

The remaining number of bags = 93 - 88 = 5 bags.

The price of 5 bags = $5 \times 12.85 = 64.25$ pounds.

so the total price = 848.10 + 64.25 = 912.35 pounds.





your understanding

A bakery shop has 20 kg and 275 g of flour used to produce cakes. If one piece of cake needs 0.18 kg and the remaining quantity of flour after making cakes is 3 kg and 175 g.

How many pieces of cake did the bakery shop make?

Some word problems have hidden question or questions that must be answered before you can solve
the problem. You have to determine what operation to use and what strategies will you use to help you
figure out how to solve the problem.

32

Solving Challenging Multistep Story Problems

on lesson 17

REMEMBER

ROBLEM SOLVING

From the school book

A jewellery maker has 0.85 kg of gold used to make
 a special type of identical rings.
 The mass of one ring is 4 g and the maker has 226 g

The mass of one ring is 4 g and the maker has 226 g of remaining gold.

Calculate the number of rings can be produced?



Hany's father bought a flat for L.E. 125,000
 He paid L.E. 31,250 in cash, and paid the rest in 72 equal installments. Find to the nearest L.E. the value of each installment.



3. Abdallah buys the sturdiest boxes for the produce at his market. He wonders what the mass of the box is in kilograms. The total mass of a box and 3 identical pomegranate is 1.03 kg When the identical pomegranates in the box are tripled, the total mass is 2.29 kg What is the mass of one of Abdallah's empty boxes?

4. Samira is training for her weightlifting competition. She attaches 4 weights to her bar-a pair of larger weights and a pair of smaller weights. One of the larger weights is 12.4 kilograms heavier than one of the smaller weights. Together the four weights have a mass of 100 kg What is the total mass of the pair of larger weights?

5. Basem is having a sale at his sweets shop. One chocolate candy is 1.95 L.E. He will provide 2 free candies for every 10 bought. A customer wants to buy 100 candies for an event. How much will the customer spend?

6. As part of her fitness training, Samira cycles 42.12 kilometres in 2 hours. If she cycles at the same rate the entire time, how far will she travel in 1 hour? Give your answer in km and meters using whole numbers.

km and m

7. Magdy is filling identical vases with water for flower arrangements at the florist. He pours 18 liters and 250 milliliters equally into 24 vases. When he is finished, Magdy still has 0.85 L of water left. How much water is in each vase? Give your answer in liters.



- 8. Omar had 30 kilograms of planting soil for his garden. He used 2.8 kg in each of his 5 large planters. He used 0.4 kg to fill each of his remaining pots. Find the maximum number of pots Omar can fill with his planting soil. Label your answer.
- 9. The mass of a package of cake is 0.08 kilograms heavier than the mass of a package of cookies. The mass of 6 packages of cake is the same as the mass of 9 packages of cookies. Label your answers.

What is the mass of a single package of cookies?

What is the mass of a single package of cake?

Unit Five Assessment



Choose the correct answer.

a.
$$600 \, \text{g} = \text{kg}$$

b.
$$0.2 \times 0.3 = -$$

c.
$$25.25 \div 0.25 =$$

e. If the area model of a problem is
$$|5|$$

3.2 y

0.8

f.
$$0.004 \times 1,000$$
 () $40,000 \times 0.001$

2. Complete.

A. <

c.
$$0.004 \, \text{km} = \text{cm}$$

d. $12.34 \times 0.9 =$ (to the nearest hundredth)

e. 43 days ≈ — Weeks (to the nearest week)



$$--$$
 × 0.01 = 5.234



3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a.
$$2400 \text{ mm} = 4.2 \text{ m}$$

b.
$$77.43 \div 0.3 = 258.1$$

c. $45.23 \times 10 = 4.523$

d.
$$6 \text{ cm}$$
 and $5 \text{ mm} = 0.65 \text{ cm}$

e.
$$5.22 \div 0.2 = 0.522 \div 0.02$$

f.
$$0.318 \times 1.5 > 3.18 \times 0.15$$

- Match the cards that have the same meaning.
 - a. 0.45 × 0.4

1. 2.43 ÷ 0.6

b. 2.7 × 1.5

2. 0.27 × 100

c. 2.43 ÷ 0.01

3. 0.027 ÷ 0.15

d. 2,7 ÷ 0.1

- 4. 0.81 × 300
- 5. Hany has 8.75 meters of wire that is cut into 25 pieces that are all the same length. Find the length of each piece of wire.
- 6. A family consumes 6.5 kg of meat monthly where the cost of 1 kg of meat is L.E. 83.5 Find what the family pays.

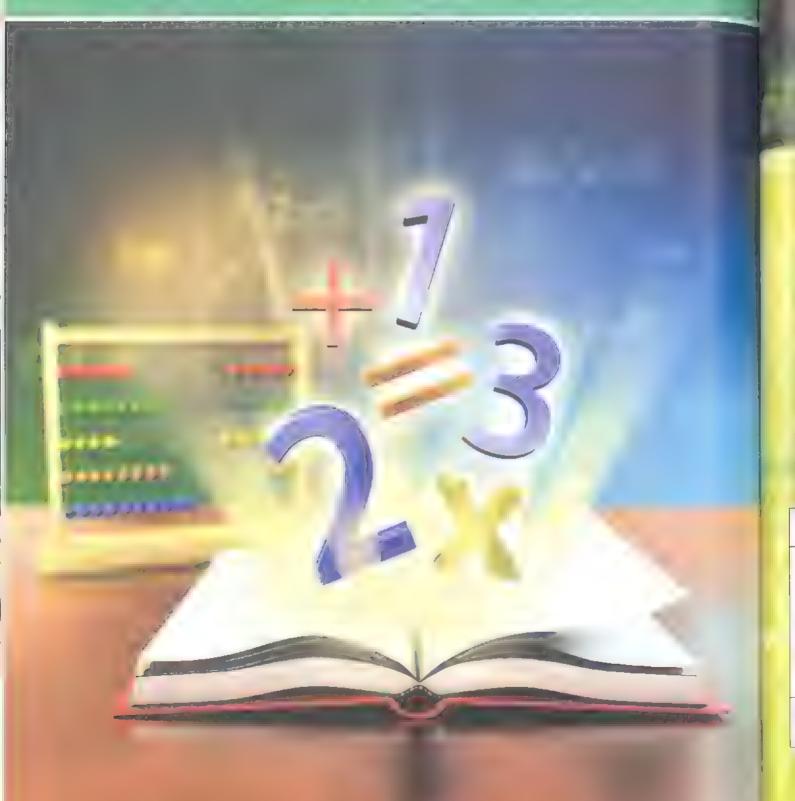


Thomas 2: I make that Counting and American

6

Numerical Expressions and Pattern:

-11



Evaluating Numerical Expressions



Learning Officers Students will use the order of operations to evaluate expressions with whole Numerical Expressions numbers and decimals. Students will identify how grouping symbols affect the order of operations Numerical Expressions Lessons Students will evaluate an expression with groping symbols. with Grouping Symbols. 1to3 Students will evaluate expressions with grouping symbols Placing Grouping Students will place grouping symbols in expressions to generate given Symbols values. Writing Expressions to Lesson 4 Students will write an expression to represent a written scenario. Represent Scenarios

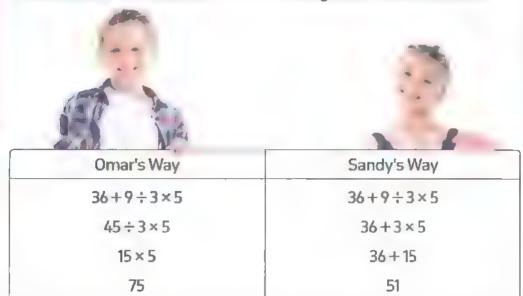


- Alumnia I Expressions
- . Numerical Expressions with Grouping Lymbols
- Placing Grouping Symbols

Learn 1

How do you evaluate expressions with none than one operation?

Two students evaluated $36 + 9 \div 3 \times 5$ and got different answers.



To avoid getting more than one answer, mathematicians use the **order of operations** given below. Sandy used the **CORRECT ORDER**. The value of the expression is **51**.



- 1. First do the operations inside parentheses and brackets.
- 2. Then, multiply and divide in order from left to right.
- 3. Finally, add and subract in order from left to right.

Example 1

Use the order of operation to evaluate each expression.

a.
$$12 + (9 - 2) \times 8$$

b.
$$53 \times 2 + 54 \div 1.5$$

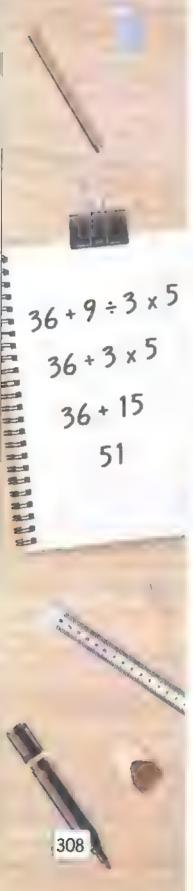
c.
$$40 \div 8 \times 0.01 + 14.95$$

d.
$$2,514.6 - 23.4 \div 0.01 + 11.7$$

e.
$$288 - [12 + 3 \times (28.5 \times 2.1)]$$

Notes for parents:

- Ask your child which operation comes first when solving the problems : $12 \div (4-1)$ and $6 \div 4 \times 5$.



There is no parenthese

Then add

o Multiply and divide first

Solution [Y]

a.
$$12 + (9 - 2) \times 8$$

Palastreses (ind

$$= 12 + 7 \times 8$$

Then multiply

$$= 12 + 56$$

finally idd

()

There is no parenthese so can be from left to rail

$$= 5 \times 0.01 + 14.95$$

c. $40 \div 8 \times 0.01 + 14.95$

= 0.05 + 14.95

- 15

d. 2,514.6 – 23.4 ÷ 0.01 + 11.7

142

b. $53 \times 2 + 54 \div 1.5$

=106 + 36

There is no parenthe old vide fire

$$= \overset{1}{2},514.6 - 2340 + 11.7$$

Then subtract from left origin

$$= 174.6 + 11.7$$

Finally add

$$= 288 - [12 + 3 \times 59.85]$$

Then multiply

Then brackets

Finally subtract

Math Hint

- For operations within parentheses
 multiply or divide from left to right
 add or subtract from left to right
- 2. For operations outside of parenthesesa. multiply or divide from left to rightb. add or subtract from left to right



= 5

your understanding

Use the order of operation to evaluate each expression.

a.
$$63 + 14 \times 25$$

b.
$$912 - 84.6 \div 0.1$$

c.
$$100 \times (72.18 + 3.12) \div 6$$

Placing grouping symbols

How do grouping symbols change the meaning of a numerical expression?

Example 2

Insert parentheses to make each statement true:

a.
$$11 - 6 - 1 = 6$$

b.
$$30-4\times2+5=2$$

c.
$$64 \div 2 \times 4 \div 2 = 4$$

d.
$$2.4 \times 3.2 + 9.1 = 29.52$$

Solution [7]

Try put parentheses between each two numbers and find the answer and decide if wrong or right.

a.
$$\circ (11 - 6) - 1$$

b.
$$\bullet (30-4) \times 2+5$$

$$= 26 \times 2 + 5 = 52 + 5 = 57$$
 • Wrong

$$\bullet 11 = (6 = 1)$$

$$=30-4\times7=30-28=2$$

c.
$$= (64 \div 2) \times 4 \div 2$$

$$= 32 \times 4 \div 2 = 128 \div 2 = 64$$
 • Wrong

Wrong

Right

d.
$$\bullet$$
 (2.4 × 3.2) + 9.1

$$-7.68 + 9.1 = 16.78$$

$$=64 \div (2 \times 4) \div 2$$

$$=64 \div 8 \div 2 = 8 \div 2 = 4$$
 Right

$$\bullet$$
 2.4 × (3.2 + 9.1)

$$= 2.4 \times 12.3 = 29.52$$



your understanding

Insert parentheses to make each statement true.

a.
$$4 \times 6 - 1.5 = 18$$

b.
$$63 \div 3 \times 3 - 4 = 3$$

c.
$$0.25 \times 40 + 15 \div 5 = 5$$

d.
$$98.25 + 47.55 \div 6 + 1 = 25.3$$

Notes for parents:

• Ask your child why the values of $15 + 24 \div 8 - 2$ and $15 \div 24 \div (8 - 2)$ are different.

Exercise 33

on lessons 1to3

· Namerical Expressions

Chamera Liprassion with one gine 5 mass

· Plaches to our Samble.

REMEMBER

() which is

PROBLEM SOLVING

From the school book

1. Use the order of operation to evaluate each expression of the following.

a.
$$10 \times 4 - 3 = ---$$

c.
$$12 + 24 \div 4 + 8 = -$$

e.
$$145.42 - 7.11 \times 10 + 13.2 =$$

g.
$$35 \times 0.1 + 89.14 \div 0.1 =$$

i.
$$597.8 \div 6.1 + 13 \times 1.7 =$$

k.
$$82.43 \times 3.1 + 4.05 \div 0.01 - 2.5 =$$

b.
$$15 \div 3 + 2 =$$

d.
$$34 \times 28 \div 2 + 5 =$$

f.
$$102.15 + 6 \div 1.2 - 34 \times 2.3 =$$

h.
$$56.5 \times 2.3 - 15 + 12.7 =$$

j.
$$1,403.5 - 12.3 \div 0.01 + 9.8 =$$

L.
$$90.7 + 116.6 \times 0.1 \times 2 - 20 =$$

2. The Right route. Ali drives a bus route through the city. His stops follow the order of operations for evaluating the expression.

 $300.53 - 11.04 \times 0.2 \div 0.01 + 13.07$

Stop 1	Stop 2	Stop 3	Stop 4
A. 300.53 – 11.04	€ . 2.208 ÷ 0.01	J. 57.898 ÷ 0.01	N. 5,789.8 + 13.07
B. 11.04 × 0.2	F. 0.2 ÷ 13.08	K. 220.8 + 13.07	P. 79.73 + 13.07
C. 0.2 ÷ 0.01	G . 289.49 × 0.2	L. 289.49 × 20	Q . 300.53 – 233.87
D. 0.01 + 13.07	H. 11.04 × 20	M. 300.53 – 220.8	R. 57.898 + 13.07

Record the letters of the correct stops along his route to show the steps for evaluating the expression.

- 1. Stop 1:
- 2. Stop 2:
- 3. Stop 3:
- 4. Stop 4:



Tour Bus

Grouping symbols. Evaluate the set of expressions.

a.
$$45.84 + 13.05 \div 5 + 20.32 \quad 1.14 \times 2.1$$

b.
$$(45.84 + 13.05) \div 5 + 20.32 - 1.14 \times 2.1$$

c.
$$45.84 + 13.05 \div 5 + 20.32 - (1.14 \times 2.1)$$

d.
$$45.84 + 13.05 \div 5 + (20.32 - 1.14) \times 2.1$$

e.
$$45.84 + (13.05 \div 5 + 20.32 - 1.14) \times 2.1$$

Grouping symbols, Advanced. Evaluate the set of expressions.

a.
$$30 \times 2.5 + 47.18 = 3.12 \div 0.1$$

b.
$$30 \times (2.5 + 47.18 - 3.12 \div 0.1)$$

c.
$$30 \times [2.5 + (47.18 - 3.12) \div 0.1]$$

d.
$$(30 \times 2.5 + 47.18 - 3.12) \div 0.1$$

e.
$$[30 \times (2.5 + 47.18 - 3.12)] \div 0.1$$

Placing Grouping Symbols to Generate Values. Place grouping symbols [parentheses and / or brackets] in the expressions to generate the given values. Be sure to evaluate the expression completely to make sure you are correct. [Hint: sometimes grouping symbols are not needed].

$$6 - 5 \times 7 + 2$$

b. The value is 27.

9×4+5÷3

$$2 \times 18 \div 9 + 9$$

d. The value is 11. $88 \div 11 - 7 + 4$

$$3.8 \times 9.5 + 6.25$$

f. The value is $42.35 3.8 \times 9.5 + 6.25$

$$20 + 33.29 \times 10 - 6.1$$

$$20 + 33.29 \times 10 - 6.1 \times 10$$

$$20 + 33.29 \times 10 - 6.1 \times 10$$



How Many Values? Use grouping symbols to create as many expressions with different values as you can.

a.
$$29.2 \pm 43 \times 0.01 \pm 15 \pm 0.1$$

b.
$$158 \div 2 + 6 \times 10.5 - 5$$

c.
$$57 - 11 \times 1.2 + 3.4 + 1.9 \div 10$$

- Place the Grouping Symbols Kamal placed grouping symbols in the expression. When he evaluated the expression, he found a value of 6.45

 What grouping symbols did he use? Where did he place them?

 15.25 \div 2 + 3 + 6.8 \div 2
- 8. Writing About Math. Reflect on the order of operations. Then, explain why it is possible for grouping symbols to change the value of an expression. Give an example to support your thinking.
- 9. Writing About Math. Explain why the values of 217 + 354 × 0.1 and (217 + 354) × 0.1 are different, what is the value of each expression?
- 10. Who is correct? Wael and Marwan both solved the problem 47.1 × 31 28.4 ÷ 4 + 33.2

 Wael says the answer is 63.815 and Marwan says the answer is 1486.2 who is correct?

 How do you know? Explain your thinking.



Multiple Choice Questions

Choose the correct answer.

1. Which is the first step in evaluating

$$28.1 - 3.5 \times 0.2 + 29 - 4$$
?

- A. 28.1 3.5
- **B.** 3.5×0.2
- C. 0.2 + 29
- **D.** 29 5
- $2.7.6 \div 0.2 + 3.3 \times 10 =$
 - A. 15.2
- **B**. 54

C. 71

D. 266

- **3.** 12 =
- •• A. $54 \div (3 + 6 \times 2)$
 - **B.** $(54 \div 3) + (6 \times 2)$
 - C. $54 \div (3 + 6) \times 2$
 - D. $54 \div [(3+6) \times 2]$
- 5. $(1,305 + 255) \div 30 \times 0.1 = -$
 - A. 2.5
 - B. 5.2
 - C. 25
 - D. 52

- 4. $83 + 45 \div 9 5 =$
 - A. 23
 - **B.** 32
 - C. 80
 - D. 83
- **6.** $(65.1 8.3) \times 0.01 + 32$
 - A. 0.568
 - B. 6.568
 - C. 32.568
 - D. 600
- 7. The second step in the expression

$$36.12 \times 4 + 55 - 12.5$$
 is

- **A.** 36.12×4
- **B.** 36.12 × 59
- C. 144.48 + 55
- D. 144.48 12.5

8 The first operation to solve

$$88 - 14 \div 7 + 12 \times 33$$
 is

- A. subtract
- B. divide
- C. add
- D. multiply



Learn

An expression in math is a sentence with numbers and math operations.

This math operation may be "addition, subtraction, multiplication, or division". Expression may contain parentheses or brackets if needed.

Writing Expression:

Example 1

Write an expression that matches the clues.

Then, evaluate the expression.

- a. Add 22.7 and 35.3, then multiply the result by 3
- **b.** Divide 225.3 by 3, then add 4.9. After, divide the result by 10
- Find the difference between 66.25 and 7.5, then divide the result by 0.2 last add to 1.4

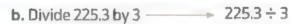
Solution [9]



Then multiply the result by $3 \longrightarrow [22.7 + 35.3] \times 3$

Hint

Parentheses are needed to find the result of adding the numbers first before doing the multiplication operation Evaluate $[22.7 + 35.3] \times 3 = 58 \times 3 = 174$



then add 4.9 • 225.3 ÷ 3 + 4.9

After, divide the result by $10 \longrightarrow [225.3 \div 3 + 4.9] \div 10$

Evaluate: $(225.3 \div 3 + 4.9) \div 10 = (75.1 + 4.9) \div 10$

 $= 80 \div 10 = 8$

c. Find the difference between 66.25 and 7.5 -- 66.25 - 7.5

Divide the result by $0.2 \longrightarrow [66.25 - 7.5] \div 0.2$

Add to 1.4 $(66.25 - 7.5) \div 0.2 + 1.4$

Evaluate: $(66.25 - 7.5) \div 0.2 + 1.4 = 58.75 \div 0.2 + 1.4$

= 293.75 + 1.4 = 295.15

Notes for parents:

 Ask your child to read the clues well, and translate it into numbers and operations.

Expressions and story problems:

Example 2

Write an expression that matches the scenario. Then, evaluate the expression.

Amgad ran 15.3 kilometers for 5 days each and 12,7 kilometers for 8 days each.

How many kilometers did he run over those 13 days?

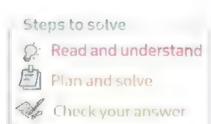
Solution []

In 5 days > 15.3 × 5

in 8 days ----> 12.7 × 8

Then in 13 days - 15.3 \times 5 + 12.7 \times 8

Evaluate: 76.5 + 101.6 = 178.1 kilometres



Example 3

Write an expression that matches the scenario. Then, evaluate the expression.

Amira had 275 pounds. She bought 3 kilograms of oranges with 7.25 pounds each and 13.75 pounds for sweet corn. How much money was left with Amira?

Solution [57]



Total money

Price of oranges ---→ 3 × 7.25

Price of oranges and sweet corn \longrightarrow 3 × 7.25 + 13.75

Left money - \sim 275 - (3 \times 7.25 + 13.75)

Evaluate: 275 - [21.75 + 13.75]

= 275 - 35.5 = 239.5 pounds.



your understanding

- a. Write an expression that matches the clues, then evaluate. Subtract 6.2 from the product of 5.2 and 3. Then multiply by 10.
- b. All had 700 pounds. He bought 3 toys for 40 pounds each and 7 toys for 50 pounds each. How much money was left with Ali?

Notes for parents:

Remind your child to follow the order of operations when he/she evaluate the expression

on lesson 4

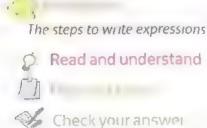
	● REMEMBER PROBLEM SOLVING	From the school boo
Mat	tch.	
a. Add 3.8 to 5.6, then multiply by 2.4		$3.8 \times 5.6 - 2.4$
b.	Subtract 3.8 from 5.6, then multiply by 2.4	$[3.8 + 5.6] \times 2.4$
C.	Multiply 3.8 by 5.6, then subtract 2.4	[3.8 + 5.6] ÷ 2.4
d.	Divide the sum of 3.8 and 5.6 by 2.4	$[5.6 - 3.8] \times 2.4$
a. /	For each problem, write an expression, evaluate the expression. Add 7.4 and 2.3. Then multiply the result by 10. Subtract 3.1 from 4.62. Then, multiply the result by 2	
The	en, evaluate the expression. Add 7.4 and 2.3. Then multiply the result by 10. Subtract 3.1 from 4.62. Then, multiply the result by 2	•
the a. /	Add 7.4 and 2.3. Then multiply the result by 10.	result by 20.
b.	Add 7.4 and 2.3. Then multiply the result by 10. Subtract 3.1 from 4.62. Then, multiply the result by 2 Multiply 6.3 by 12.4 and then add 21.88. After, divide the	result by 20. result by 5.
b. c. N d.	Add 7.4 and 2.3. Then multiply the result by 10. Subtract 3.1 from 4.62. Then, multiply the result by 2 Multiply 6.3 by 12.4 and then add 21.88. After, divide the	result by 20. result by 5. m 224.7. Multiply by 100.

i. Find the difference between 10 and 9.27. Multiply by the sum of 54 and 46. Then, divide 1,168 by the result.

h. Find the sum of 1.3 and 3.45. Multiply by 8. Next subtract 2.02. Then subtract the result from 75.

For each problem, write an expression that matches the scenario. Then, evaluate the expression.

a. Ehab had 102.5 pounds. He bought 4 toys for 19.5 pounds each. How much money was left with Ehab?



- b. L. Kamel is saving money to buy a car. He currently has 1,000 L.E. He begins working two jobs. At his first job, he saves 50 L.E. a week. At his second job, he saves 30 L.E. a week. He saves the money from his jobs for 4 weeks to add to his savings. How much does Kamel have saved at the end of the 4 weeks?
- c. Sandy made 11.8 liters of orange juice. She sold 4 liters and divided the rest into 6 bottles. How much orange juice is in each bottle?
- d. Ali traveled 3,900 kilometers by car. He drove 560 kilometers for 3 days each and 430 kilometers for 5 days each. How many kilometers were left to finish his trip?
- e. ... Mounir is lifting weights to help train for an upcoming competition. He attaches 4 weights to his bar, a pair of larger weights and a pair of smaller weights. Each large weight has a mass of 33.75 kilograms. Together the four weights have a mass of 100 kg. What is the mass of one of the smaller weights?
- f. As a part of his fitness training, Mounir cycles 38.7 kilometers in 2 hours. If he cycles at the same rate the entire time, how many meters does he cycle per minute?
- g. Hoda is filling identical vases with water for flower arrangements at the florist. She starts with 15.75 liters and pours an equal amount into 16 vases. When she finished, Hoda still has 3.75 L of water left. How much water is in each vase?
 Give your answer in liters.

Multiple Choice Questions

Choose the correct answer.

- 1. Which expression matches the clue "Add 30 to 25 and divide the result by 0.5"?
 - A. $30 + 25 \div 0.5$
 - B. $0.5 \times [30 + 25]$
 - C. $[30 + 25] \div 0.5$
 - **D.** $30 \div 0.5 + 25$
- 3. Which expression matches the clue "Multiply 5.4 by 100, next add 18. Last divide the result by 9"?
 - A. $5.4 \times 100 + 18 \div 9$
 - B. $5.4 \times (100 + 18) \div 9$
 - C. $[5.4 \times 100] + 18 \div 9$
 - **D.** $[5.4 \times 100 + 18] \div 9$
- 5. Which expression matches the clue "Add 7.12 to the result of multiplying 32.1 by 10, then subtract the result from 45"?
 - A. $32.1 \times 10 + 7.12 45$
 - B. $45 [32.1 \times 10 + 7.12]$
 - C. $[32.1 \times 10 + 7.12] 45$
 - **D.** $32.1 \times [10 + 7.12] = 45$

- 2. Which expression matches the clue "Subtract 9.7 from the result of multiplying 11.4 by 3.2"?
 - A. $[11.4 9.7] \times 3.2$
 - **B.** $[11.4 3.2] \times 9.7$
 - C. 9.7 11.4 × 3.2
 - D. $11.4 \times 3.2 9.7$
- 4. Which expression matches the clue "Divide 66 by 0.2, then add to the result, the result of multiplying 3.6 by 0.1"?
 - **A.** $66 \div 0.2 + 3.6 \times 0.1$
 - **B.** $66 \div [0.2 + 3.6] \times 0.1$
 - C. $66 \div [0.2 + 36 \times 0.1]$
 - **D.** $[66 \div 0.2 + 3.6] \times 0.1$
- 6. Which expression matches the clue "Find the difference between 42 and 37. Multiply by the sum of 2 and 8. Then divide 2,000 by the result"?
 - A. $2,000 \div (42 37 \times 2 + 8)$
 - **B.** $2,000 \div [(42-37) \times (2+8)]$
 - C. $[42-37\times2+8] \div 2,000$
 - **D.** $[42 37] \times [2 + 8] \div 2,000$
- 7. Which expression matches the clue "Emad bought 70 fish. He put 6 fish in each one of 9 bowls. How many fish are left with Emad"?
 - A. $[70 6] \times 9$
- **B.** $[70 9] \times 6$
- C. $70 + 6 \times 9$
- **D.** $70 6 \times 9$
- 8. Which expression matches the clue "Mary run 12.5 kilometers for 3 days each and 11.3 kilometers for 7 days each. How many kilometers did she run in these 10 days"?

- **A.** $12.5 \times 3 + 11.3 \times 7$ **B.** $12.5 \times 3 11.3 \times 7$ **C.** $12.5 \times 7 + 11.3 \times 3$ **D.** $[12.5 + 11.3] \times [7 + 3]$

Concept

Analyzing Numerical Patterns



Lessons	Ident fying Numerical Patterns	 Students will identify a numerical pattern. Students will explain the rule for a numerical pattern. Students will use letters to represent unknown quantities in a rule for a numerical pattern.
586	Extending and Creating Numerical Patterns	 Students will extend a numerical pattern. Students will create a numerical pattern. Students will generate two numerical patterns using two given rules.
Lesson 7	Solving Problems with Numerical Patterns	Students will solve real world problems involving numerical patterns.



• Extending and Creating Numerical Patterns



A rule can be used to describe a pattern

Problem

Mr, Ahmed wrote a number pattern.

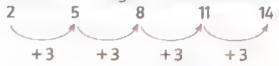
What rule describes his pattern?

What will the next number be?



Look at the number pattern. Find the rule.

What should I do to 2 to get 5? What should I do to 5 to get 8?



The numbers increase by 3. So, the rule "add 3" describes the pattern.

Use the rule to extend the pattern.



A rule must be true for all the numbers

in the pattern.

So, the next number in the pattern is 17



27, 23, 19, 15,

The rule is subtract 4.

 To find the missing number, subtract 4.

15 - 4 = 11

So, the missing number is .

The rule: x = 4



×8 ×8 ×8 ×8

The rule is multiply by 8.

 To find the missing number, multiply by 8.

 $8 \times 512 = 4096$

So, the missing number is 100%.

The rule: n × 8

321

Notes for parents :

 Ask your child to describe a pattern and let him/her discover how he/she could find the next number in a pattern.

Example 1

Look at each set of numbers and identify whether the numbers form a pattern. If yes then identify the rule.

- a. 7,14,28,56,-
- c. 90,85,70,60,

- b. 2,3.5,5,6.5,—
- d. 8,16,24,30,

Solution [9]



- a. Yes, the rule: 2 × n
- c. No

- b. Yes, the rule: n + 1.5
- d. No

Example 2

Look at each table and determine the rule use a variable to write the rule.

a. ſ

Output
7
8
9
10

h.

Input	Output
4	1
8	2
12	3
16	4

Input	Output
10	8
12	10
14	12
16	14

Rule:

- Rule:
- Rule:

Solution [V]



- b. n ÷ 4

c. n-2

Example 3

Write the rule for each pattern with a variable then complete the pattern by finding the missing values.

a.

Input	Output
7	42
8	48
9	
10	60
	66
	7 8 9

Input	Output
4	15
5	16
6	
7	
	19

Input	Output
32	16
24	12
_	10
12	
_	5

d.

Input	Output
5	9
6	11
9	17
10	
12	_

- Rule: -
- Rule:

- Rule:
- Rule:

Notes for parents:

Ask your child to use letters to represent unknown quantities in a rule for a numerical pattern.

Solution []



b. Rule: n + 11 missing numbers are: 17,18,8

c. Rule: n ÷ 2 missing numbers are: 20,6,10

d. Rule: $2 \times n = 1$ missing numbers are: 19,23



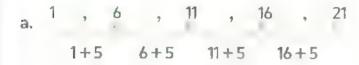
Example 4

Using the information given. List the first five numbers in the pattern.

a. Starting number:1 Rule:n+5 b. Starting number:2 Rule:n×1.5

c. Starting number: 6.25 Rule: n ÷ 0.5 d. Starting number: 4 Rule: n × 2 – 2.5

Solution [9]





c. 6.25 , 12.5 , 25 , 50 , 100 $6.25 \div 0.5$ $12.5 \div 0.5$ $25 \div 0.5$ $50 \div 0.5$





[·] Ask your child to write his/her pattern, and then ask him/her to write its rule



your understanding

1. Write the rule for each pattern with a variable, then complete the pattern by finding the missing values.

a.

Input	Output
9	27
9.5	28.5
10	30
11.5	
	36

Rule: ----

b.

Input	Output
4	10
5	13
6	16
7	
9	

Rule: ----

- 2. Using the information given, list the first five numbers in the pattern.
 - a. Starting number: 5

Rule: $n \times 7$

b. Starting number: 3

Rule: $(n+2) \times 1.5$



Notes for parents:

Ask your child to explain the rule of each pattern.



on lessons 5&6

- Identifying Numerical Patterns
- Extending and Creating Numerical Patterns

REMEMBER

_8	1	- 1	()	

O MERCY

From the school book

1. Look at each set of numbers and identify whether the numbers form a pattern.

If yes, then identify the rule.

	Set	Pattern ? (Y / N)	Rule
1.	5,10,20,40,80		
2.	3,6,9,15,21,28		
3.	1.5,3,4.5,6,7.5		
4.	5,3,6,1,7,5		
5.	1,3,9,18,54		
6.	85,73,61,49,37		

2. Look at each table and determine the rule. Use a variable to write the rule.

a.	Input	Output
	1	6
	2	7
	3	8
	4	9

b.	Input	Output
	1	8
	2	16
	3	24
1	4	32
	5	40

C.	Input	Output
	70	10
	63	9
	56	8
	49	7
	42	6

Rule:

d.	Input	Output
	1	8
	2	9
	3	10
	4	11

Rule: —

Input	Output
5	. 1
10	2
15	3
20	4
25	5

Rule:

f.	Input	Output
	35	25
	34	24
	33	23
	32	22
	31	21

Rule:

g.	Input	Output
	3	18
	4	24
	5	30
	6	36
	7	42

1.	Input	Output	1.
	3	12	
	6	24	
	9	36	
	12	48	

Number of wheels (output)
2
4
6
8
10

Rule:-

R	u	le	

j.	Input	Output
-	2	20
	3	30
	4	40
	5	50
	6	60

k.	Input		Output
	6		1
	12		2
	18		3
	24	1	4
	30		5

l.	Input	Output
	1	1.5
	2	2.5
1	3	3.5
	4	4.5
	5	5.5

Rule:

_		-	
Ю	0.4	l o	7
ш	u	ᄕ	-

3. Write the rule for each pattern with a variable, then complete the pattern by finding the missing values.

a. 1 52,44,36,28,20,

Rule: ---

b. 44 23,27, ____,35,39,

Rule:

c. 2,4,8,16, ,64,____

Rule:

d. 17, _____, 21, 23, _____,

Rule:

e. 32,16,8,_____,2,____

Rule:

f. . _____,8,15, ____,29,

Rule:

4. Write the rule for each pattern with a variable then complete the pattern by finding the missing values.

a.

Input	Output
5	20
6	A
7	28
В	32
9	36

	Input	Output
	3	27
ĺ	4	36
İ	5	A
	В	54
	7	C

C.

Input	Output
20	18
18	16
16	Α
B.	12
C.	10

Rule:

Rule:

Rule:

326

Rule:

d.	Input	Output	e.	Input	Output	f. i	Input	Output
	31	10	1	5	12		10	6
	39	18	1	6	14		12	7
	Α	27		7	16		A	8
	56	35		8	A		16	9
	77	B	i	Q	IR			

Rule: Rule:

5.	Write (✓)	to	the	correct	statement	and	(X)	to	the	incorrect	statement.
----	-----------	----	-----	---------	-----------	-----	-----	----	-----	-----------	------------

а. Т	The missing number in the pattern 2 $, 6$ $, 18$ $,$ $, 162$ is 36	[
------	--	---

b. The rule in the pattern:
$$5,7,9,11,...$$
 is $n-2$

c. The rule in the pattern:
$$1,4,19,94,...$$
 is $n \times 5 - 1$

e. The rule in the pattern:
$$7,15,31,63,...$$
 is $n \times 2+1$

6. Using the information given, list the first five numbers in the pattern.

a. Starting number: 4 Rule: n + 7

7 9 9 9

b. 🖾 Starting number:1 Rule:n+3

c. Starting number: 10 Rule: $n \times 0.5$

d. Starting number: 3 Rule: n × 2 – 1.5

e. Starting number: 2 Rule: $n \times 3 + 0.3$

f. 🖾 Starting number : 5.25 Rule : n ÷ 0.5

7 7 7 9

7. Look at the pattern and the two students' work. Then, respond to the prompt.

Write a rule using a variable and explain your thinking.

Yahia's Work

Rule: $n \times 7$

I think the rule is multiply by 7 because $4 \times 7 = 28$ and

 $5 \times 7 = 35$ and it works for each pair.

Input	Output
28	4
35	5
42	6
49	7
56	8

Walid's Work

Rule: n + 7

I think the rule is divide by 7 because $28 \div 7 = 4$

and $35 \div 7 = 5$ and it works for each pair.

Which student is correct? Explain how you know your answer is correct.

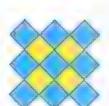
8. Tile Pattern. Abeer is laying floor tiles in the pattern shown. Each picture represents one stage of the pattern. The pattern grows consistently between stages.

Answer the questions about the pattern.

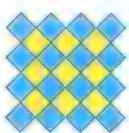
Stage 1







Stage 3



a. How many blue tiles will be in Stage 4? How many yellow tiles will be in Stage 4?

Blue:

Yellow:

b. How many blue tiles will be in Stage 5? How many yellow tiles will be in Stage 5?

Blue:-

Yellow:---

c. How many blue tiles will be in Stage 10? How many yellow tiles will be in Stage 10?

Blue:-

Yellow:

d. Fill in the missing values. Use the rule for the tile pattern.

Number of Blue Tiles (Input)	Number of Yellow Tiles (Output)
144	A
225	B.
C	324
400	D.

Choose the correct answer.

- 1. The rule of the pattern: 3,7,11,15,...is_
 - A. n-4
- B. n + 4
- C. n×4
- D. n ÷ 4

- 2. The rule of the pattern: 3,6,12,24,... is
 - A. n + 3
- B. n×3
- C. n×2
- D. n + 2

- 3. The rule of the pattern: 1, 2, 5, 14, ... is
 - A. n + 1
- B. $n \times 2 = 1$
- C. $n \times 3 = 1$
- D. $n \times 2 + 1$

- 4. The rule of the pattern: 100, 50, 25, 12.5, ... is
 - A. $n \div 2$
- B. n×2
- C. n 50
- D. n = 25

5. The rule of the pattern:

input	Output
3	4.5
4	6
5	7.5
6	9

- A. n + 1.5
- B. $n \times 2$
- C. n+2
- D. $n \times 1.5$

The missing number in the following pattern is

Input	Output
4	9
5	11
1 6	13
7	1
8	17
	E 45

A. 12

B. 15

C. 21

- **D.** 28
- 7. Using the following information, what is the first four numbers in the pattern?

Starting number: 2

Rule: $[n+3] \times 2$

- A. 2,10,26,58
- **B.** 2,5,8,11
- C. 2,10,26,52
- **D**. 2,10,25,50
- 8. Using the following information, what is the first four numbers in the pattern?

Starting number: 3

Rule: $n \div 0.2$

- **A.** 3,3.2,3.4,3.6 **B.** 3,0.6,0.12,0.024 **C.** 3,2.8,2.6,2.4
- **D.** 3,15,75,375

Solving Problems with Numerical Patterns



How to solve problems with patterns?

Some story problems involve numerical patterns.

To solve these problems, you should first find the rule of the pattern.

Example 1

When Sandy was 10 years old, her brother Sameh was half her age. How old will Sameh be when Sandy is 15 years?

Solution []

Sameh was $\frac{1}{2} \times 10 = 5$ years then Sandy is older than Sameh by 5 years. then the rule of this problem is n-5When Sandy is 15 years Sameh is 10 years.

Input Sandy age	Output Sameh age
10 <u>n</u> -	5 5
15 n-	5 10



Mina was making orange juice. He noticed the number of oranges used to make 4 glasses and 6 glasses of juice.

a. Use the pattern to write the rule of it and complete the table.

Number of glasses	Number of oranges
1	A
2	В
3	C.
4	12
5	D
6	18



- b. How many oranges are needed to make 7 glasses?
- c. How many glasses are made with 24 oranges?

Notes for parents:

· Ask your child about the strategy he/she used to extend the pattern in story problem.

Solution [V]

a. The rule: n × 3

because
$$12 \div 4 = 3$$

 $18 \div 6 = 3$

 $A = 1 \times 3 = 3$ oranges

 $B = 2 \times 3 = 6$ oranges

 $C = 3 \times 3 = 9$ oranges

 $D = 5 \times 3 = 15$ oranges

b. Number of oranges = $7 \times 3 = 21$ oranges.

c. Number of glasses = $24 \div 3 = 8$ glasses.





your understanding

A car consumes 10 liters of fuel to cover 100 km. Use the pattern to complete the table and write the rule of pattern.

Liters	Kilometers
10	100
15	
	170
19	
20	

The rule is

Ask your child to complete the table. Let him/her explain how he/she complete it and describe the rule
of the pattern in this table.

Exercise

on lesson 7

Solver Problems with Numerical Patterns

REMEMBER







- List From the school book
- 1. 🔝 a. When Shams was 6 years old, her brother Tamer was half her age. How old will Tamer be when Shams is 12?
 - b. Complete the table to show Shams' and Tamer's ages.

Shams' Age	Tamer's Age
15	A.
17	В.
C	16
22	D,
E.	21

- 2. A car consumes one liter of fuel to cover 10 km.
 - a. Complete the table.
 - b. How many liters of fuel does the car consume to cover 90 km?
 - c. What is the maximum distance which the car covers if its tank contains 24 liters of fuel?

Number of liters	Distance in km.						
1	10						
2	A.						
3	В.						
C.	40						
D.	50						

- 3. If 3 kg of sugar are used to make 6 kg of apricot jam.
 - a. Complete the table.
 - b. How many kg of the same kind of jam can be made out of 6 kg of sugar?
 - c. How many kg of sugar are needed to make 18 kg of the same kind of jam?

Mass of sugar in kg	Mass of apricot in kg
1	A.
2	В.
3	6
4	C.

- 4. A seamstress is making dresses. She noticed the amount of fabric she used to make 3 dresses and to make 5 dresses.
 - a. Use the pattern to complete the table.
 - b. How much fabric will the seamstress need to make 7 dresses?
 - c. How many dresses can the seamstress make with 42.5 meters of fabric?

Number of dresses	Fabric needed (m)
1	A.
2	В.
3	7.5
4	C.
5	12.5

- a book is overdue. It charges another amount for each additional day it is overdue. The table shows the amount charged for a book that is overdue.
 - a. What is the amount charged for each additional day?
 - b. Following that rule, what is the amount charged on the first day?
 - c. Write a rule with a variable for how much the library charges where n is the number of days the book is overdue. Remember to include the amount charged on the first day in your rule.

Fines for Overdue Library Books

Days overdue	Fine In L.E.
2	5
4	11
6	17



Library Books

- 6. If 15 kilograms of flour produce out 150 loaves of bread.
 - a. Complete the table.
 - b. How many loaves of bread can be produced out of 20 kg of flour?

Mass of flour in kg	Number of loaves
10	A.
11	В.
12	C.
D.	130
14	E
15	150

Challenge

7. Pyramid pattern. Each picture represents one stage of the pattern, and the pattern grows consistently between stages.

Complete the table.

Stage 1



Stage 2

Stage 3



Stage	Number of balls			
1	1			
2	5			
3	14			
4	A.			
5	R			

Unit 5in Assessment



† . Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. The next number in the pattern: 7,17,27,.... is 47.

[

b. $15 + 8 \times 6 = [15 + 8] \times 6$

.

 $\boldsymbol{c}. \;\; The first step to evaluate the expression :$

$$5.7 - 3.4 \times 0.1 + 2.6$$
 is subtracting $5.7 - 3.4$

d. The rule of the pattern: 5,1,0.2,0.04,... is $n \times 0.2$

]

e. The third number of the pattern which its starting number is 3 and its rule is $(n + 1) \times 2$ is 18

f. The value of the expression: $88 \div [11 - 7] + 4$ is 11

ſ

2. Choose the correct answer.

a. 145 =

A.
$$24.5 \times (20 - 10) \div 2$$

B. $245 \times (1-0.9)$

C.
$$24.5 \times 10 - 20 \times 5$$

D. $2 \times 100 - 6.5 \times 10$

b. In the opposite table:

The rule of the pattern is

 $A_1 n + 4$

B. n×5

C. n + 8

D. $[n+3]\times 2$

Input	1	1 2		4	
Ouput	5	10	15	20	

c. Which expression matches the clue "Add 18.7 to the result of dividing 45.6 by 10, then subtract the result from 99"?

A. $45.6 \div 10 + 18.7 - 99$

B. $99 - [45.6 \div 10 \div 18.7]$

C. $[45.6 \pm 10 \pm 18.7] = 99$

D. $[99 - 45.6] \div [10 + 18.7]$

d. The second step to evaluate the expression $9.3 \times 0.1 + 4.7 - 1.1$ is -

A. 9.3×0.1

B. 9.3×4.8

 0.093 ± 4.7

D. 0.93 + 1.1

e. If the starting number in a pattern is 3 and the rule of the pattern is n + 3, then the fourth number in the pattern is

A. 3

R A

C. 9

D. 12

f. The next number in the pattern: 5,6.5,8,9.5,... is

A. 10

B. 10.5

C. 11

D. 11.5

3. Complete.

- a. The value of the expression : $[25.6 1.9] \div 0.2 + 66.45$ is
- **b.** If the rule of the pattern is $n \times 2 + 3$, then the next number in the pattern 1, 5, 13,... is
- c. The expression which matches the clue "Subtract 12.4 from the result of multiplying 8.5 by 3.2" is ——— and its value is
- d. In the pattern: 4,11,18,25,... The rule is———
- **e.** The first operation to evaluate the expression :

$$94 - 3.4 \div 2 + 55 \times 10$$
 is —

f. In the pattern:1,3,9,27,...The rule is

4. Match.

a. The next number in the pattern 2,4.5,7,9.5 is

b. $33 \div [2+9] \times 5 =$

c. The third number in the pattern whose starting number is 2 and its rule is $(n-1) \times 3$ is

d. The value of the clue "Multiply 1.8 by 10, next add 10, last divide the result by 4" is

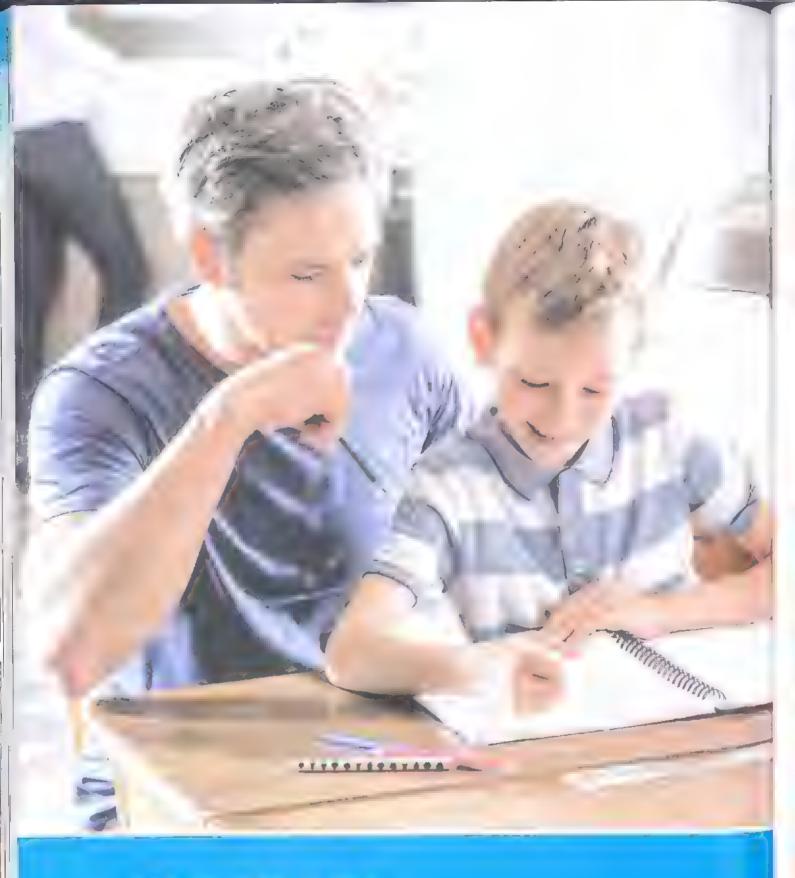
6

7

12

15

- 5. Hany had 1,000 pounds. He bought 5 toys for 33 pounds each and 5 toys for 27 pounds each. How much money is left with Hany?
- 6. When Sara was 8 years old, her brother Ali was half her age. How old will Ali be when Sara is 18 years old?



Glossary



addend

عدد مُضاف

Any number being added. In the equation 6+8=14,6 and 8 are both addends, 14 is the sum.

algorithm

خوارزمية

A step-by-step method for computing.

area

مساحة

The measure, in square units, of the inside of a plane figure

area model

نموذج مساحة المستطيل

A model of multiplication that shows each place value product.

Associative Property of Addition

خاصية الدمج في عملية الجمع

States that changing the grouping of three or more addends does not change the sum.

Associative Property of Multiplication

حاصية الدمج في عملية الضرب

States that changing the grouping of three or more factors does not change the product.



benchmark

معيار

A known size or amount that can be used as a reference to nelp understand a different size or amount. Benchmarks can be helpful in estimation and in checking the reasonableness of answers.

benchmark fractions

كسور معيارية

Fractions that are commonly used for estimation. Benchmark fractions are useful when comparing and ordering. One-half, one-third, one-fourth, three-fourths, and two-thirds are all benchmark fractions.

brackets

قەلس

Symbols used in pairs to group things together.

capacity

سعة

The amount of liquid a container can hold.

common factor

عامل مشترك

Any factor that is shared by two or more numbers, Six is a common factor of both 12 and 24.

common multiple

مصاعف مشترك

Any multiple that is shared by two or more numbers. Six is a common multiple of both 2 and 3

Commutative Property of Addition

حاصية الإندال في عمليه الجمع

States that changing the order of the addends does not change the sum.

Commutative Property of Multiplication

خصية الإبدال في عملية الصرب

States that changing the order of the factors does not change the product.

compatible numbers

أعداد لها فيمة مميزة

Numbers that are easy to compute mentally and are close in value to the actual numbers. Compatible numbers can be used when estimating.

compose

انكؤن

To put together smaller numbers to make larger numbers.

Composite number

عدد غير أولى

A positive number that is not prime

decompose

بجلل

To separate a number into two or more parts.

difference

فرق

The amount that remains after one quantity is subtracted from another. The answer in a subtraction problem.

digit

رقم

Any of the symbols 0,1,2,3,4,5,6,7,8 or 9 [Also known as base 10 numerals.]

Distributive Property of Multiplication

خاصية التوزيع في الضرب

States that whether the numbers in parentheses are added before or after multiplication, the results are the same.

مقسوم dividend

A number that is divided by another number. Fifty-s x is the dividend in $56 \div 8 = 7$

division

عملية القسمة

Splitting into equal parts or groups also known as fair sharing.

divisor

مقسوم عليه

The number by which another number is divided. Eight is the divisor in $56 \div 8 = 7$



equation

معادلة

A mathematical sentence with an equal sign.
The amount on one side of the equal sign has the same value as the amount on the other side.

4 + 3 = 7

equivalent

مكافئ

Having the same value.

estimate يُقدّر

To find a number close to an exact amount, an estimate tells about how much or about how many.

expanded form

صبغة ممتدة

A way to write numbers that shows the place value of each digit, 263 = 200 + 60 + 3

expression

تعبير رياضي

A mathematical phrase without an equal sign. n + 4



factors

عوامل

Numbers we can multiply together to get another number

factor pairs

أزواج عوامل العدد

Sets of two numbers that multiply together to reach a certain product.

factor tree

شجرة العوامل

A diagram that shows all the factors of a number, with the number appearing at the top of the "tree" and factors of that number appearing in "branches" until each branch ends in prime number finite

نمائي

Not infinite. Has an end.

fraction

كسر اعتيادي

A way to describe a part of a whole or a part of a group by using equal parts

greatest common factor (GCF)

العامل المشترك الأكبر

The greatest number that is a factor of two [or more] other numbers.

Hundredths

أجزاء من المائة

In the decimal numeration system, Hundredths is the name of the next place to the right of Tenths.

1

infinite

لانهائي

Without an end. Not finite.

input

مدخل

The known variable you feed into an expression.

inverse operation

عملية عكسية

Opposite operations. They are operations that reverse the effect of another operations.

least common multiple (LCM)

المصاعف المشترك الأصغر

The smallest positive number that is a multiple of two or more numbers.

-

midpoint strategy

استراتيجية نقطة المنتصف

A method in which students use the midpoint of two numbers on number line to help visualize rounding numbers.

multiples

مضاعفات

Numbers created by multiplying two factors.

multiplication

عملية الضرب

The process of finding the product of two or more numbers "repeated addition".

multiplicative comparison

معارثة باستخدام عملية الصرب

A way to compare quantities using multiplication.



numerical pattern

نمط عددي

A list of numbers that follow a certain sequence or pattern.

Order of Operations

ترتيب إجراء العمليات

A set of rules tells us the order in which to compute.

- 1. For operations within parentheses a. multiply or divide from left to right b. add or subtract from left to right
- 2. For operations within brackets a. multiply or divide from left to right b add or subtract from left to right
- 3. For operations outside parentheses a, multiply or divide from left to right b, add or subtract from left to right

مُخرَج output

What comes out of the function; the solution.

parentheses

أقواس

Grouping symbols for operations. When s mplifying an expression, the operations within the parentheses are evaluated first.

partial products

ناتج عملية الضرب بالتجزئة

Any of the multiplication results we get leading up to an overall multiplication result.

partial products model

نموذج إبجاد ناتج عملية الضرب بالتجزئة

A model that breaks numbers down into their factors or palce values to make multiplication easier.

partial quotients model

بموذج إيجاد خارج عملية القسمة بالتجزئة

A method of dividing in which multiples of the divisor are subtracted from the dividend, and then the partial quotients are added together.

pattern

L - 1

A repeating or growing sequence or design,

place value

قيمة مكانية

The value of the place of a digit in a number.

powers of ten

قوى العدد ١٠

A set of mathematical notations that allow you to express any number as a product of multiples of 10.

prime factorization

التحليل إلى عوامل أولية

Finding which prime numbers multiply together to produce the original number

prime number

عدد أولى

A whole number greater than 1 that has exactly two different factors, 1 and itself.

product

ناتج الضرب

The answer to a multiplication problem. In $6 \times 7 = 42,42$ is the product.

quotient

خارج القسمة

The answer to a division problem.

reasonable

معقول

Makes sense according to the numbers and operation used.

regroup

بعيد التسمية

To rearrange numbers into groups of 10 when performing mathematical operations.

regrouping

إعادة التسمية

The process of making groups of tens when adding or subtracting two-digit numbers (or more).

remainder

ناقى القسمة

The amount left over when one number is divided by another.

round

قرب

A way to change a number to a shorter or simpler number that is very close to the original number.

rule . oacie

something that happens every time [for example: 2,5,8,11 ... the rule is + 3].



sequence

تسلسل

A set of numbers arranged in a special order or pattern.

simplify

hour

To express a fraction in simplest form.

standard algorithm for multiplication

حوررية لصرة لمعيارية

Strategy for multiplying by using partial products or multiplying in parts

standard form

صبغة فناسبة

A common or usual way of writing a number using d g ts. 12,376 is in standard form.

sum

محموع

The answer to an addition problem.



Tenths

أحزاء من عشرة

In the decimal numeration, Tenths is the name of the place to the right of the decimal point,

Thousandths

أحزاء من الف

The value of a digit that is the fourth position from the right when describing whole number place value.



unknown

مجهول

Part of an expression or equation that has to be found; a var able that can be represented in a problem by a letter.



value

لبمة

How much a digit is worth depending on where it is in a number; the result of a calculation.

variable

متعبر

A letter or symbol that represents a number. for example : in $5 \times b = 10$, b is the variable.



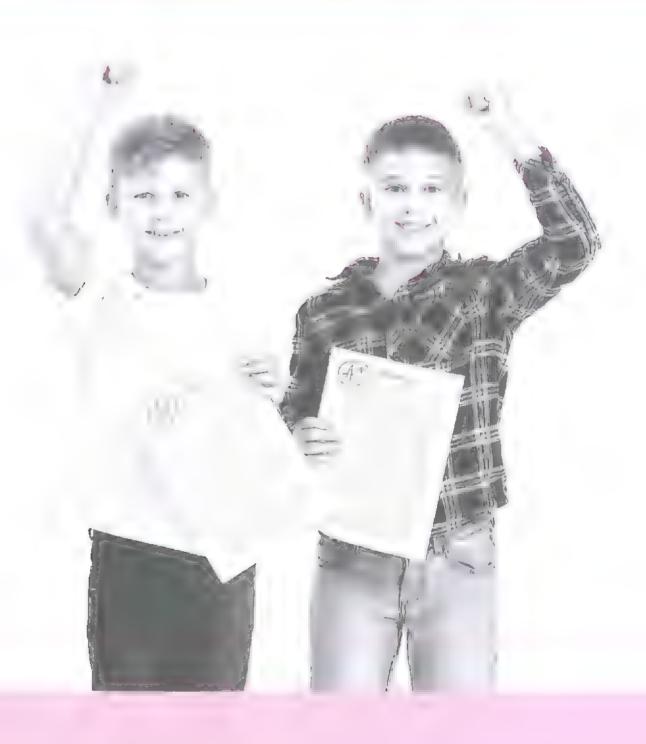
THE PARTY

Mathematics

Step by Step Revision



Cumulative Assessments



Cumulative Assessment

Till lessons (1 & 2) unit 1

. Complete.	
-	and its value is
b. The decimal form of 5 and 17 thousandths is	
c. The word form of 8.005 is —	
d. In 36.291, the digit 9 represents	
. Put (✓) for the correct statement and (X) for th	ne incorrect statement.
 a. Seventy two and seventy two thousandths = 	
b. The place value of the digit 6 in the number 5.2	
c. The value of the digit 2 in the number 51.216 is:	
d. 5 Hundreds, 2 Tens, 3 Ones, 6 Tenths, 2 Thou	
e. Seven hundreds and seven hundredths in the	standard form is 7.700
Join.	
a. Five tenths	50
b. Five tens	0.5
c. Five hundredths	0.005
d. Five thousandths	0.05
In the number 59.841	
a. What is the value of 1?	
b. What does the digit 9 represent?	
c. What is the value of the digit in the Hundredti	hs place?



1	Dut (./	1	for the	correct	ctatamont	and / Y) for	tha	incorract	statement.	
1	· Put (v	1	LOL RUG	COLLECT	statement	and (A	TOF	tne	incorrect	statement.	4

a.
$$37.906 = 30 + 7 + 0.9 + 0.6$$

b.
$$306 + 0.3 + 0.006 = 306.306$$

c.
$$23.51 \times 10 = 2.351$$

2. Complete.

a.
$$3.7 \div 10 =$$
 b. $25.164 \times 100 =$

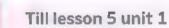
f.
$$5,000 + 20,000 + 0.9 + 6 + 0.001 =$$

3. In the following problem, record the number in the place-value chart and decompose the number 17.439 in expanded form and in another way then, answer the questions.

Thousands		Ones		• Decimals			
0	Н	T	0	•	Tenths	Hundredths	Thousandths

a.	7 st	way	[expanded	form]	6
----	-----------------	-----	-----------	-------	---

Jumulative At action and



1. Compare. Write (< , > or =).

a. 0.005 () 0.05

b. 10.1 () 10.011

c. 3.198 3.2

d. 24.6\() 24.600

e. $14\frac{315}{1000}$ 41.315

- f. 2 Ones , 2 Hundredths 2.2
- g. Fifteen thousandths 0.01+0.005

2. Choose the correct answer.

- a. 36.214 × 100 =
 - A. 36.214
- B. 362.14
- C. 3,621.4
- D. 36,214

- b. 5.361 >
 - **A.** 5.37 .
- **B.** 5.362
- **C.** 5.366
- D. 3.561

- c. $316 \div 10 =$
 - **A.** 3.16
- **B**. 31.6
- C. 3,160
- D. 0.316
- d. In the problem 74.8 \div 10 The value of the digit 4 decreased from 4 to
 - **A**. 40
- B. 4
- **c.** 4
- **D.** 0.004

3. Order from least to greatest.

- a. 32.141, 23.141, 32.411, 23.411
- b.1.351, 1.35, 1.531, 1.315

Use the place-value chart to solve the following problem. Fill in the blanks to show how the value of each digit also changed.

Thousands		Ones			Dec	imals
0	Н	T	0	•	Tenths	Hundredths

a. The value of the whole number

(increased/decreased) when multiplying by 10

b. The value of the digit 5

(increased/decreased) when multiplying by 10

- from
- to

Completive Agreement Till lesson 6 unit 1

	County of the	
10	Complete	d

- a. $76.514 \approx$ [to the nearest Hundredth]
- b. 0.9986 ≈ ___ _____ [to the nearest Thousandth]
- c. 10.18 \approx _____ [to the nearest whole number]
- **d.** $731.56 \div 100 =$

Put (\checkmark) for the correct statement and (X) for the incorrect statement.

- a. 30 + 5,000 + 9 + 0.03 + 0.004 = 5,039.304
- **b.** The value of the digit 5 in the number 36.251 is 0.05
- $c. 2.465 \times 10 = 24.56$
- d. 31.64 > 31.0946
- Write three decimals, if we round each of them to the nearest Hundredth becomes 15.36
- Label the mid point of the number line. Place the decimal number 3.54 at its proper location. Then, round it to the nearest tenth.
 - 3.54 ≈

Choose the correct answer.

- a. In the number 432.519, which digit is in the Hundredths place?
 - A. 4 B. 3

- C. 5
- D. 1

- b. 701.008 = 700 + 1 +
 - A. 0.080 B. 0.800
- C. 8

D. 0.008

- c. 5 ones 35 thousandths 5.05
 - A. >
- 8. <

- C. =
- d. 3.8 $9 \approx 3.85$ (to the nearest Hundredth)
 - A. 3
- B. 4

C. 5

D. 6

- 1. Find the result of each of the following.
 - a. 15.36
 - + 7.97

- b. 38.56
- + 19.097

c. 2.65 + 9.3 =

d. 17.4 + 5.6 = ---

- 2. Complete
 - a. 7 Hundredths + 62 Thousandths =

Thousandths

- b. 14.72 +
- = 15.89
- c. 34.567 ≈

(to the nearest Hundredth)

- d. The place value of the digit 0 in the number 3.506 is
- e. $36.24 \div 10 =$

- f. 500 + 5 + 0.5 + 0.005 =
- Use the place-value charts to solve each problem. Fill in the blanks to show how the value of each digit also changed.

189 ÷ 100 =

Thousands	ousands Ones		•	Dec	imals	
0	Н	Т	0	•	Tenths	Hundredths

a. The value of the whole number —

___ [increased/decreased] when dividing by 100

b. The value of the digit 8

[increased/decreased] when dividing by 100

c. The value of the digit 9

(increased/decreased) when dividing by 100

d. The value of the digit 1

[increased/decreased] when dividing by 100

4. Mathew has 136,20 L.E. His brother Giovannie has 64.30 L.E. What is the total they have all together?

Curriural ve Associati



Till lessons 10 to 12 unit 1

1. Find the result of each of the following.

$$-0.531$$

2. Complete.

a.
$$2.45 \times 10 =$$

$$-41.41 = 3.8$$

c. The place value of the digit 6 in the number 35.264 is

[expanded form]

e. $34.179 \approx$ [to the nearest Tenth]

Thousandths.

3. Compare Write (<,> or =).

$$10 - 1.01$$

b.
$$0.2 - 0.05$$

c.
$$7.9 + 2.3$$

$$11.7 - 1.3$$

4. Choose the correct answer.

a.
$$371.5 \div 100 =$$

c.
$$340 + 0.3 + 0.04 =$$

- Put (√) to the correct statement and (X) to the incorrect statement.
 - a. The Round of 4.519 to the nearest Tenth is 4.52
 - **b.** 3.000 + 300 + 3 + 0.3 + 0.003 = 333.303
 - c. 516.7 = 516.700
 - d. 9 Hundredths 65 Thousandths = 25 Thousandths.
- 2. Complete.
 - a. The decimal form of 7 and 7 hundredths is
 - **b.** $7 \div 100 =$
 - c. $2.463 \approx$ [to the nearest whole number]
 - d. 3 Hundredths + 36 Thousandths = Thousandths.
- 3. Compare Write (<,> or =).
 - **a.** 3.5 2.1

3.5 + 2.1

b. 31.46 × 10

31.46 ÷ 10

c. 51.5 + 5.15

5.15 + 51.5

d. 2.14×10

- 214 ÷ 10
- 4. Choose the correct answer.
 - a. 71 hundredths + 9 hundredths = ____ tenths.
 - A. 88
- B. 80
- C. 800
- D. 8

- b. 14.27 +
- = 15.89
- B. 1.6
- C. 1.62
- **D.** 1.65

c. 55.5 - 5.55 =

A. 1.53

- A. 50.05
- **B.** 50.5
- C. 49.95
- D. 49.59

- d. 7 tents = 7 hundredths =
 - A. 6.3
- **B**. 0

- C. 0.36
- **D.** .0.63
- . Mona had 95.5 L.E. She spent 35.75 L.E. Find the remainder with her.

Eslam has 29.75 L.E. and Sameh has $15\frac{1}{2}$ L.E. Find How much money they have together?

Cumulative Assessments Time IIII

Complative Avenue 1 Till lessons (1 & 2) unit 2

								_	-		
1.	Put (🗸) to	the	correct	answer	and	(X) to	the	incorrect	statement	

a. The mathematical statement "k = 5.8 + 7.16" represent an equation.

b. If
$$8.23 + P = 9.25$$
, then $P = 1.02$

c. The equation which represent the bar model
$$\begin{bmatrix} 7.26 \\ a & 3.5 \end{bmatrix}$$
 is $a + 3.5 = 7.26$

e. The value of the digit 6 in the number 3.162 is
$$\frac{6}{100}$$

Solve the following equation using inverse operation strategy.

a.
$$75.85 + k = 90.90$$

b.
$$1.5 + 13.25 + m = 20.75$$

Solve the following equations.

a.
$$h = 3.56 = 2.04$$

b.
$$2.3 + 3.1 = 1.5 + v$$

4. Complete.

a.
$$364.1 \div 100 =$$

6 If we subtract a number from 7.5, we get 4.91, then write the suitable equation and solve it.

Cumulation (a)



Till lessons (3 & 4) unit 2

1. Match.

a.
$$\sqrt{2.361 + m} = 3.52$$

b.
$$7.3 - m = 2.456$$

c.
$$m = 1.347 = 2.141$$

d.
$$m + 9.241 = 10.36$$

Find the value of each variable in the following part - part whole tables.

Choose the correct answer.

a.
$$7,000 + 700 + 70 + 0.007 =$$

d.
$$29.99 \approx$$
 [to the nearest tenth]

Put (✓) to the correct statement and (X) to the incorrect statement.

c. The mathematical statement "
$$m = 0.4 - 117$$
" represent an equation.

5. What is the story ?

Write a story problem for the following equation, then solve it 3 25 + 6.25 - n

Till lessons (5 & 6) unit 2

 Find all the factors of the number 	r 18	number	the	of	factors	1	the	all	Find	1.
--	------	--------	-----	----	---------	---	-----	-----	------	----

Factor pairs tree	- Factor rainbow		Factor T-chart	
		1		
		1		

. Factorize each of the following numbers to the prime factors.

- a. 36
 - 36=

- **b.** 15
- 15 =

Put (\checkmark) to the correct statement and (X) to the incorrect statement.

- a. 2 is a factor of 17
- b. 3 is a prime number.
- c. 25 is a composite number.
- d. 65.461 > 65.416
- e. 3.351 = 3 + 0.3 + 0.05 + 0.01

4. Complete.

- a. is the only even prime number.
- b. The prime factors of 14 are and
- c. 3 thousands and 3 thousandths = =
- d. 9 hundredths 81 thousandths = ____ Thousandths.
- e. The smallest prime odd number is

... Find the missing factors represented by the variables.

a. $b \times 8 = 24$

c. $12 \times N = 12$

$$N =$$

e. 38.1 – K = 35.1

$$K =$$

b. 3.2 + a = 4.7

d. m - 1.41 = 2.7

f. 5.5 + L = 7

Factorize the following numbers to their prime factors, then find the GCF for them.

a. 12 and 18

12 =

18 =

GCF =

b. 28 and 42

28 =

42 =

GCF =

Find the common factors and the greatest common factor GCF of 8 and 24

a. Factors of 8:

b. Factors of 24:

c. Common factors:

b. GCE:

Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 0 is a common factor for all the numbers.

b. The GCF of 4 and 8 is 4

c. 1 is the GCF of 9 and 18

d. $32 \div 100 = 0.32$

e. $54.369 \approx 54$ (to the nearest whole number)

f. 5 + 50 + 500 + 0.5 + 0.05 = 555.550

Two numbers, the prime factors of the first are 2,3 and 5 and the prime factors of the second are 2,2,3 and 5, then:

a. The first number = _____ b. The second number =

c. GCF =

Find the missing factors represented by the variables.

a.
$$x + 2.1 = 3.46$$

x =

c.
$$n \times 123 = 0$$

n =

b.
$$5 \times m = 35$$

m =

d.
$$y = 4.62 = 1.7$$

V =

Cumulative Assessment 12 Till lessons (8 & 9) unit 2

 \blacksquare . Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 34 is a multiple of 9			b.	12 is a common n	nultiple of 4 ar	nd 6
c. The LCM of 6 and 15 is 60	()	d.	13 is a prime num	nber.	(
e. The GCF of 3 and 4 is 12			f.	There are no comn	non multiples	of 7 and 5
2. Complete.						
a. The common multiple for a	all nui	mbe	rs is			
b. The common factor for all r	numb	ers i	5			
c. $7,000 + 70 + 0.7 + 0.007 =$						
d. 9561 ÷ 100 =						
e. 3.5 + 16.014 =						
f. 7 hundredths - 35 hundredt	th=			thousandths.		
g. 27=3 × hence 2	27 is a	mul	tipl	e of ar	nd is also a mu	ultiple of
3. Answer the following.						
a. List the first seven multiple	s of 6	•				
b. List the first seven multiple	25 of 4	ŀ				
c. List the common multiples	of 6 a	nd 4	[ot	ner than 0]		
d. Find (LCM) of 6 and 4						_
4. Find LCM of 12 and 9.					[12]	9
12 =				/		
9 =						
LCM =						
Use the prime factorization of	f each	ı of	the	following number	s to find the	LCM.
a. 8 and 24				b. 10 , 12 and 15		
8 =				10 =		
24 =				12 =		
LCM =				15 =		
				LCM =		

1 Use the prime factorization of each of the following numbers , then find the GCF and LCM:

a. 12 and 14

12 =

14 =

GCF =

LCM =

b. 10 and 15

10 =

15 =

GCF =

LCM =

2. Two numbers, the prime factors of the first are 2, 2, 5 and 5 and the prime factors of the second are 2, 2, 5 and 7.

a. The first number =

c. Their GCF =

- **b.** The second number =
- d. Their LCM =

3. Complete.

a. The place value of the digit 7 in the number 3.267 is

b. 3 hundredths - 25 thousandths =

thousandths.

- c. The common factor for all numbers is
- d. The smallest prime number is
- e. 7.3 3.71 =
- f. $26.349 \times 100 =$

4. Two clocks are turned on the same time on clock chimes every 15 minutes, the other clock chimes every 25 minutes in how many minutes will they chime together? Do you have to find the GCF or the LCM? What is the answer?

5. Giovanni has 18 oranges and 12 bananas. He wants to make fruit baskets with the same number of each fruit in each basket. What is the greatest number of fruit baskets he can make? Do you have to find the GCF or the LCM? what is the answer?

Cumulative Assessments

Dumulative Ausessment



Till lesson 1 unit 3

1. Find each product of the following expressions:

b.
$$3 \times 10,000$$

$$d. 10 \times 12$$

e.
$$50 \times 10,000$$

2. Match:

3. Put (1) to the correct statement and (X) to the incorrect statement.

a.
$$13 \text{ kg} = 13,000 \text{ g}$$

c.
$$7,000 \text{ m} = 7 \text{ km}$$

) | d.
$$23 \times 10,000 = 23,000$$

e.
$$5 \times 100 = 500$$

e.
$$5 \times 100 = 500$$
 () f. There are 800 cm in 8 m
e. $70,000 + 700 + 7 + 0.07 = 777.7$ () h. $542.9 > 54.29$

1.
$$62.946 \approx 62.9$$
 Ito the nearest whole number

i.
$$62.946 \approx 62.9$$
 [to the nearest whole number]

4. Complete.

a.
$$17 \text{ kg} = \underline{\hspace{1cm}} g$$

e. The common multiples of all the numbers is

f. The LCM of the two prime numbers 3 and 7 is

q. 5 hundredths - 5 thousandths =

_ thousandths

5. If 10 millimeters makes 1 centimeter, How many millimeters are there in 6 centimeters?

6. Elen ran a 7-kilometer race on Sunday. If there are 1,000 meters in 1 kilometer, How many meters did she run?

1. Choose the correct answer.

a.
$$4 \times 354 = [4 \times 300] + [4 \times 50] + [$$

B.
$$4 \times 40$$

C.
$$4 \times 400$$

D.
$$40 \times 40$$

b.
$$[100 + 70 + 6] \times [20 + 9] =$$

c.
$$7,000 + 50 + 400 + 0.6 + 0.07 =$$

d.
$$9,571 \div 100 =$$

e.
$$5.971 \approx$$
 ____ [to the nearest tenths]

2. Put (/) to the correct statement and (X) to the incorrect statement.

a.
$$17 \times 509 = [17 \times 500] + [17 \times 9]$$

b.
$$17 L = 1,700 mL$$

e.
$$275 \times 12 = [100 + 100 + 70 + 5] \times [10 + 2]$$

f.
$$15 \times 1,000 = 1,500$$

3. Solve each of the following problems using an area model.

a.
$$304 \times 14$$

c.
$$23 \times 44$$

4). Use the distributive property to solve each of the following.

Cumulative Antesamon



Till lesson 4 unit 3

. Solve using partial products Model to Multiply.

Choose the correct answer.

- a. What is the ones digit of the product of 953 × 23 will be without solving the whole problem?
 - A. 0
- B. 2

C. 3

D. 9

- **b.** $15 \times 21 =$
 - A. 135
- B. 513
- C. 315
- **D.** 3,015

- c. 3.496 =
 - **A.** 152×23
- **B.** 152 × 32
- **C.** 215×23
- **D.** 215×32

- d. $9.702 \div 10 = -$
 - A. 97.2
- B. 970.2
- C. 97.02
- D. 9.702

- e, 43 kg = ...
 - A. 43
- **B.** 4300
- C. 43,000
- D. 43

3. Use the following area models to write the distribution equation.

- a.
- 100 20 100 | 35 500

- Giovanni bought 24 boxes of soft drinks for 115 L.E. each. How much money did Giovanni pay?
- . Match.
- 13×25
- 31 × 25
- 13 × 52
- 31×52

- 775
- 325
- 676
- 1,612

Cumulitive Ausessmen



Till lessons (5 & 6) unit 3

1. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. If
$$5.36 + m = 9.74$$
, then $m = 4.38$

d.
$$1,234 \times 25 = 30,850$$

e. The value of the digit 6 in the number 924.63 is
$$\frac{6}{100}$$

f.
$$12 \times 37 = (10 + 2) \times (30 - 7)$$

2. Find the result.

3. Find the result.

a.
$$3,241 \times 54$$

d.
$$8.5 - 3.64$$

$$e. 21.46 + 7.491$$

f.
$$5 - 3.6$$

4. Determine the values of the missing digits and then find the product.

b.

B =

D =

300 10

20

5 Ď.

Э.	Fru in	tne	area	model	Star	ting	क्र	tetter	A

2

E.

B.

A.

Final product:

Cumulative	Less	
A Company of the Comp	C. 101 A . 49 . 48 . 19	



Till lesson 7 unit 3

4.	Complete.
alle 6	Complete.

a.	There are	grams	in	15	kilograms
----	-----------	-------	----	----	-----------

c.
$$120 \times 30 =$$

e.
$$[3 \times 200] + [3 \times 50] + [3 \times 7] = 3x$$
 —

2. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 13 is a prime number.

) | **b.** 321 + 0.123 = 0.444

c. 35 × 21 < 53 × 12

) d. The LCM of 4 and 12 is 48

e. If
$$m - 2.4 = 3.6$$
 then $m = 6$

Choose the correct answer.

a. The place value of the digit 4 in the number 98.764 is

A.
$$\frac{4}{10}$$

B.
$$\frac{4}{1000}$$

b. The standard form of the number six thousands and six thousandths is

A. 6.6

B. 60.06

C. 600.006

D. 6,000.006

c. Hany runs 110 minutes every day. What is the number of running minutes in 15 days?

A. 1.065

B. 1,605

C. 1.560

D. 1,650

d. What is the unknown value in the area model of 21 × 53?

A. 60

B. 600

C. 6

D. 6.000

20

1

50 1.000 ? 50 3

3

e. 7 Hundredths - 7 thousandths = thousandths.

A. 7

B. 0

C. 63

D. 77

4. A factory produces 4,550 toys every month. Another factory produces 7,350 toys every month. Find the difference between their product in ten months.

5. Sameh has 300 pounds to spend on new clothes. He buys 12 pair of socks for 21 pounds each. What is the left money with sameh now?

Cumulative Assessments ______



Manual Profession of the Second Mariana

Till lesson 1 unit 4

1. Complete.

- a. In the equation $36 \div 4 = 9$, the divisor is
- b. The dividend in the equation $25 \div 4 = 6 R1$ is

| d.
$$---\div 5 = 8$$

e.
$$30 \div 4 = 7 R$$

?. Put (/) to the correct statement and (X) to the incorrect statement.

a. The division equation which represent the bar diagram $is 150 \div 5 = 30$

- b. Dividend = Quotient × divisor remainder
- c. 5 hundredths 35 thousandths = 30 thousandths
- **d.** $24.561 \approx 24.6$ (to the nearest tenths)
- e. 1234 11 = 2468
- f. The place value of the digit 3 in the number 1,234 is tenths

5. Find the result of each of the following.

c.
$$41.14 + 4.114 =$$

While dividing a number by 3. Mathew got a quotient of 7 and a remainder of 2. What is the number?

Find the GCF and LCM for the numbers 18 and 30.

Cumulative Asset Lauri



Till lesson 2 unit 4

10

735

10

525

10

3.15

105

100

2,835

1. Choose the correct answer.

a. In the opposite area model, which choice best represents the problem?

A.
$$2,835 \div 21 = 100,305$$

B.
$$2,835 \div 21 = 180$$

C.
$$2,835 \div 21 = 135$$

D.
$$2,835 \div 12 = 135$$

b.
$$5,555 \div 55 =$$

c. In the equation $666 \div 19 = 35 R1$ the remainder is

d.
$$7.641 \div 100 =$$

e.
$$9,000 + 50 + 300 + 0.6 + 0.01 =$$

2. Use the area model strategy to solve the following division equations.

a.
$$1,035 \div 9$$



3. Put (/) to the correct statement and (X) to the incorrect statement.

- a. If $3 \times 8 = 24$ then $3 \times 80 = 240$. b. 7 hundreds and 7 hundredths = 700.07
- c. $205 \times 11 = 2,255$

-) d. 754 3.41 = 4.13
- e. 19 is a composite number.
- f. The LCM of 3 and 5 is 30
- 4. If 16 plums are packed 4 in a bag, then how many bags will there be?

- Use the partial quotients strategy to solve the problems.
 - a. 4,464 ÷ 36

....

b. 2,129 ÷ 23

- 2. Choose the correct answer.
 - a. The next step in the partial quotient model when we divide 3,650 ÷ 25 is
 - A. Multiply 25 × 40
 - C. subtract 40 25

- **B.** Divide 150 ÷ 25
 - D. Add 150 + 40
- 25) 3, 6 5 0 -2, 5 0 0 100 -1, 1 5 0 -1, 0 0 0 40 -1 5 0

- **b.** $91,000 = 91 \times$
 - **A.** 10
- **B.** 100
- C. 1,000
- **D.** 10,000

- c. 7 km =
 - A. 7,000
- B. 700
- **C.** 70
- D. 7

- **d.** If $35 \times 121 = 4,235$ then $4,236 \div 35 =$
 - A. 121
- B. 121 R1
- C. 121 R2
- **D**. 121 R3
- e. By using the bar model 3.16 m 2.8 the value of m is
 - A. 2.8
- B. 1.64
- C. 1.8

D. 0.36

- 3. Find the result of.
 - a. $2,401 \times 36 =$

b. 3,921 ÷ 35 =

c. 17.51 + 36.098 = -

d. 214.6 – 34.14 =

- 4. Compare Write (<, > or =).
 - a. 3.4 + 0.21
- 0.34 + 2.1
- **b.** 312 × 11 (
- 346 × 11

- c. 36 ÷ 9
- 36 ÷ 5
- d. 4+0.4+0.01+0.003
-) 4.413
- Fill all factors of each of the following numbers. (use a suitable way).
 - a. 12

b. 24

Cumulative Assessment



Till lessons (5 & 6) unit 4

1. Write the division equation that matches the multiplication problem.

a.
$$24 \times 143 = 3,432$$

2 Divide using the standard algorithm for division.

- Choose the correct answer.
 - a. The division equation that matches $113 \times 24 = 2,712$ is

A.
$$113 \div 24 = 2,712$$
 B. $113 \div 2,712 = 24$ **C.** $24 \div 113 = 2,712$

D.
$$2,712 \pm 24 = 113$$

b.
$$1.001 \times 25 =$$

d.
$$3.6 + 5.411 =$$

A. 17

B. 170

e. 5 hundreds and 5 hundredths =

Put (✓) to the correct statement and (X) to the incorrect statement.

) **b.**
$$3 \text{ hundredths} - 3 \text{ thousandths} = 0.027 ($$

c.
$$123 \times 21 = 2,583$$

- e. The mathematical statement 3.46 + 11.7 called an equation.
- 5. Solve each of the following equations.

a.
$$K + 2.14 = 4.12$$

| **b.**
$$m = 7.02 = 3.2$$

Colors affix Albanda



Till lesson 7 unit 4

1. Find the result of each of the following.

a.
$$213.5 + 17.64$$

2. Complete.

a. In the division equation
$$29 \div 3 = 9$$
 R2 the remainder is

b.
$$754.6 \pm 100 =$$

d. If
$$125 \times 5 = 625$$
, then $_{2}626 \div 5 = 125$ R

3. Match.

c.
$$5 + 0.3 + 0.01$$

4 Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a.
$$3\frac{7}{100} \approx 3.07$$
 [to the nearest tenths]

b.
$$1,515 \div 15 = 101$$

d.
$$24 \times 65 = [4 \times 5] + [4 \times 60] + [20 \times 5] + [20 \times 60]$$

In one year, a factory used 13 250 meters of cotton, 6,850 fewer meters of silk than cotton, and 1,500 fewer meters of wool than silk.

How many meters of fabric were used in all?

Cumulative Assessments Cumulative Assessments

Cumulative Assessment



Till lessons 1 to 3 unit 5

1. Complete.

- a. $0.576 \times 100 =$
- **b.** 1.2 × 0.2 =

c. $0.25 \times 4 =$ ___

- d. $0.01 \times 0.1 =$
- e. $700 + 5{,}000 + 60 + 9 + 0.04 + 0.1 =$
- f. 214.081 ≈ [to the nearest tenths]

2. Choose the correct answer.

- a. $3.94 \times 10 =$
 - A. 3.94

A. 1

- **B**. 0.394
- C. 39.4
- D. 394

- b. 3.94 ×
- = 394
- B. 10
- C. 100
- D. 1.000

- c. 9.734 × 10 ≈
- (to the nearest tenths)
- A. 97.34
- B. 97.4
- C. 10
- D. 97.3

- d. 3,264 thousandths =
 - A. 3.264
- B. 32.64
- C. 326.4
- D. 0.3264

- e. 4.444 ÷ 44 =
 - A. 11
- **B.** 101
- C. 110
- **D.** 1.001

3. Put the suitable relation (<, > or =).

- a. 4.4×0.1
- - 0.044×10
- **b.** 5× 0.001
- 0.5×0.01

- c. 15 Hundreds
- 15 Hundredths d. 25 km
- 2,500 m

- e. 690 ÷ 15
- $960 \div 15$

4. Find the unknown letters in each of the following.

- a. $496 = 4 \times [A] + 9 \times [B] + 6$
- A =
- ,B=

- **b.** $305.09 = 3 \times [m] + 5 + 9 \times [n]$
- m = $_{2}$ n =
- c. $24.306 = 2 \times [K] + 4 + 3 \times [L] + 6 \times [r]$ K = ...
- ,L= ____

d. $7.043 \times 1000 = [S]$

S = -

L Complete.

- a. If $19 \times 4 = 76$ then $1.9 \times 0.4 =$
- b. If 152 × 7 = 1,064 then 1.52 × 0.7 =
- c. 0.479 × 100 = .____
- d. $23.46 \approx$ [to the nearest tenths]
- e. 16 thousands and 16 thousandths = _____
- f. 18.3 7.461 =

2. Match. (By using the fact $(143 \times 6 = 858)$)

a. ♦ 143 × 0.6

1. 4 8580

b. ♦ 1.43 × 0.6

2. • 85.8

c. 14.3 × 0.6

3. • 8.58

d. ∮ 143 × 60

4. 0.858

3. Look at the area models, use the information provided to find the missing numbers. Then, Find the product.

- a. 2 0.5 ? 14 ? 0.4 ? 0.2
- b. 2 ? 008 ? 6 1.5 ? 0.5 1 ? 0.040

product:

- 4. Find the result of each of the following .
 - a. 321.9 + 15.84 =
- **b.** 25.41 17.941 =

c. $125 \times 34 =$

d. 3830 ÷ 25 =

5. Use an area model to find.

product: -

a. 4.2×5.6

b. 1.2 × 3.25

राज्य मेहिंगा से अवस्था में कार्य



Till lessons (6 & 7) unit 5

By using the standard algorithm, find the product.

- 1. 7 4 3. 5
- b. 5 3. 2 8

Compare the product by putting (< , > or =).

- a. 0.75×0.2
- 7.5×0.2
- **b.** 4.2 × 153.2
- 4.2 × 15.32

- c. 13.9×0.4
- 1.39×4
- **d.** 0.234×5
- 23.4×0.5

- e. 1.01 × 0.1
- 10.1×0.1

3. Complete.

a. 30 + 3,000 + 0.3 =

b. 21 hundredths + 5.4 =

c. 75.214 × 100 =

- d. If $25 \times 5 = 625$, then $626 \div 5 = 25 R$
- e. 6 hundredths 6 thousandths = ___
- ___ thousandths.

4. Choose the correct answer.

a. $3.21 \times 0.9 \approx$ [to the nearest tenths]

- A. 2.889
- B. 2.8
- C. 2.9
- D. 2.89
- b. The decimal point in the product of 0.01 × 0.1 is after
- decimal places,

- B. 2

C. 3

D. 4

- c. $0.2 \times 1.12 =$
 - A. 224
- B. 22.4
- C. 2.24
- D. 0.224

- d. If $35 \times 47 = 1645$, then $3.5 \times 0.47 =$
 - A. 164.5
- B. 16.45
- C. 1.645
- D. 1645

- e. 5 thousandths × 4 = ____
 - A. 0.02
- B. 0.2
- C. 2

D. 20

5. By using the opposite Area model find:

m + n =

2 0.7 2.1 6 0.4 8.0

1. Complete.

- a. 145 cm = 145 × ___ m = ___m.
- **b.** 15.6 kg + 1,800 g = kg.
- c. The place value of the digit 9 in the number 35.29 is
- d. 3.003 = _____ [word form]
- e, 7.777 × 100 = ___
- 1. If $18 \times 69 = 1,242$, then $1.8 \times 0.69 =$

2. Choose the correct answer.

- a. 17.93 kg = ____ g.
 - A. 179.3
- B. 1.793
- C. 17.930
- **D**. 179,300

- b. 3,465 mL = ____ L
 - A. 3.465
- **B**. 34.65
- C. 346.5
- **D**. 3,465

- c. 900 + 90 + 9 + 0.9 =
 - A. 9.999
- B. 99.99
- C. 999.9
- D. 9,999
- d. 5 tenths = 35 hundredths = hundredths.
 - **A**. 5
- **B.** 35
- **C.** 30
- **D**. 15

- e. 4,224 ÷ 12 =
 - A. 235
- **B.** 352
- C. 532
- **D**. 32

- f. 0.01 × 0.1 =
 - A. $\frac{1}{10}$
- B. $\frac{1}{100}$
- C. $\frac{1}{1,000}$
- D. 1

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 341.65 > 341.56

-) | b. 0.46 m < 430 mm
- ()

- c. If $31 \times 25 = 775$, then $_{2}777 \div 31 = 25 \text{ R2}$
-) d. 1.2 × 0.3 = 0.36
- ()

e. Two hundred seventy five tents = 270.5 (

4. Order each of the following from least to greatest.

- a. 0.65 km , 590 m , 0.8 km , 705 m
- b. 325.7 mL ₂0.59 L ₂806 mL ₂0.55 L

Choose the correct answer.

A. 0.54

B. 1.55

C. 0.45

D. 1.88

b.
$$3.330 \div 32 = 104 R$$

A. 2

B. 3

C. 4

D. 5

c. If
$$x = 2.456 = 1.987$$
, then $x =$ _____

A. 4.334

B. 4.453

C. 4.444

D. 4.443

d.
$$[80 \times 10] + [80 \times 5] + [3 \times 10] + [3 \times 5] =$$

A. 85×13

B. 83 × 15

C. 83×51

D. 38×51

A. 7345

B. 73.45

C. 734.5

D. 0.7345

2. Complete.

a. $36.365 \approx 36.4$ (to the nearest

b. If the price of 15 books is 315 pounds, then the price of each book equals pounds.

c. The GCF of 6 and 15 is

d. 36 x

= 36.000

e. 3,333 mL= L

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. $35 \times 76 = [3 \times 7] + [3 \times 6] + [5 \times 7] + [5 \times 6]$

b. 10 is a common multiple of 2 and 5

c. 3.45 + x = 6.4 is an equation.

d. If $3.333 \div 15 = 222 R3$, then $15 \times 222 = 3.333$

e. 3 hundredths \pm 50 thousandths \equiv 0.08

4. Mona made a liter of sugar can juice. She drank 570 milliliters. Her mother drank 0.33 Liters. How much sugar cane Juice is remaining?

5. If the weight of Hany, Wael and Heba are 85.7 kg, 94,560 g and 75.6 kg, what is the total of their weights?

Comulative Assessment



Till lessons (11 & 12) unit 5

1. Find quotient of each of the following.

a.
$$5.8 \div 100 =$$
 b. $0.7 \div 0.001 =$ **c.** $12.7 \div 0.01 =$

c.
$$12.7 \div 0.01 =$$

2. Solve the following problems:

3. Complete.

c.
$$34.49 \div = 3.449$$

d,
$$-----\div 10 = 2.51$$

e.
$$\div 100 = 14.652$$

4. Compare. put (< , > or =).

The smallest prime odd number.

f. 637 hundredths.

|--|

The price of one toy is 15.5 L.E, find the price of 100 toys.

Giovanni walked 7.25 km. in 10 days equally, what is the covered distance in meters did he walk in each day?

1.	Use 1	the	shown	models	to	write	the	quotient
	for e	ach	divisio	ons.				

a.
$$1.5 \div 0.3 =$$

2. Choose the correct answer.

a. This model represents ____

A.
$$8 \div 2 = 4$$

A.
$$8 \div 2 = 4$$
 B. $0.8 \div 0.2 = 4$

C.
$$80 \div 20 = 4$$

C.
$$80 \div 20 = 4$$
 D. $8 \div 0.2 = 40$

b.
$$1.5 \div 0.5 =$$

c.
$$2 \div 0.5 =$$

d.
$$3.2 + 4.05 \boxed{} 7.05 + \frac{1}{4}$$

Put (✓) to the correct statement and (X) to the incorrect statement.

a.
$$4 \frac{8}{100} \approx 4.1$$
 [to the nearest tenths]

b.
$$0.05 = 5$$
 thousandths.

c.
$$134 \times 20 = 268$$

d.
$$5.2 - 3.765 = 1.435$$

e. If
$$45 \times 21 = 945$$
, then $4.5 \times 0.21 = 0.945$

4. Find the result.

1. Complete.

c.
$$= \div 0.1 = 0.84$$

[to the nearest hundredths]

2. Find the quotient of each of the following:

a.
$$2.67 \div 1.2$$

b.
$$4.384 \div 0.32$$

c.
$$8 \div 7$$
 (to the nearest tenth)

3. Choose the correct answer.

a.
$$80 \div 0.08 =$$

b.
$$30.24 \div 3.6 =$$

d. The prime factorization of 6 is -

$$C.5 + 1$$

f. If
$$3.012 \div 12 = 251$$
, then $251 \times 12 = -$

4. Omnia has two strips of cloth. One is 25 centimeters wide, and the other is 45 cm wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips? Do you have to find the GCF or the LCM? What is the answer?

5. Ahmed has 300 pounds to spend on new clothes. If he bought 12 pair of socks for 18 pounds a pair. How much money will he have left to spend?

Cumulative Asset men



Till lesson 17 unit 5

1. Choose the correct answer.

a.
$$700 g = _{-}$$
 kg.

A. 7

B. 0.007

C. 0.07

D. 0.7

b.
$$0.3 \times 0.5 =$$

A. 0.35

B. 0.15

C. 1.5

D. 15

A. 6,240

B. 7.4

C. 6.24

D. 624

d. 0.007 × 1,000

 $70,000 \times 0.001$

A. <

B. >

C. =

e. 7 tenths - 63 hundredths =

hundredths.

A. 70

B. 7

C. 700

D. 7000

2. Put (/) to the correct statement and (X) to the incorrect statement.

a. 5 cm. and 3 mm. = 3.5 mm.

b. $77.43 \div 0.3 = 258.1$

c. $7.214.6 \times 0.1 = 72.146$

d. 13 is a composite number.

e. 7 - 5.12 = 2.12

f. 152 + 0.37 = 152.37

3. Edward has 3.45 meters of wire that is cut into 15 equal pieces. Find the length of each piece of wire.

4. Hany's father bought a car for L.E 125,000. he paid L.E 31.250 in cash, and he divide the rest into 72 equal instalements. Find to the nearest L.E the value of each instalement.

Cumulative Assessments

Dumulative Assessment

 н

Till lessons 1 to 3 unit 6

1. Use the order of operation to evalute each expression of the following.

- a. $34 \times 28 \div 2 + 5 =$
- **b.** $1.403.5 12.3 \div 0.01 + 9.8 =$
- c. $12 + 24 \div 4 + 8 =$
- d. $3.52 \times 2.2 \div 0.01 + 6.9 = ...$

Compare. Write (< , > or =).

a. 0.01×0.1

b. 3.41 ± 2.59

3.41 - 2.59

 $1 \div 1000$

c. $[38.2 + 32] \times 0.01 + 15$

 $38.2 + 32 \times 0.01 + 15$

d. The smallest prime number.

The common factor for all numbers.

e. 3.475.1 × 0.01

34.751 ÷ 0.01

e. 33.33

3.333

Choose the correct answer.

a. The first operation to solve $983 - 16 \div 8 + 11 \times 10$ is —

- A. Add.
- B. Subtract.
- C. Multiply.
- D. divide.

b. 1,356 mL = _____L

- A. 1.356
- B. 13.56
- C. 135.6
- D. 1356

c. $15.6 + 3.125 \approx$ _____ (to the nearest tenths)

- A. 18.7
- B. 18.8
- C. 18,725
- **D.** 18.73

d. 12 = ____

A.
$$54 \div \{3 + 6 \times 2\}$$
 B. $[54 \div 3] + [6 \times 2]$ **C.** $54 \div [3 + 6] \times 2$

C.
$$54 \div [3 + 6] \times 2$$

D.
$$54 \div [[3+6] \times 2]$$

e. $0.2 \times 0.4 = -$

- A. 8
- B. 08
- C. 0.08
- D. 0.008

f. The value of 5 in the number 3.256 is

- B. 100
- C. 1000
- D. 0.5

4. Place grouping symbols [parentheses and / or brackets] in the expressions to generate the given values.

- a. The value is 18
- 7-4×5+1
- b. The value is 9
- $9 \times 3 + 2 \div 5$

1. Complete.

- a. 376 thousandths + 524 thousandths = _____ tenths.
- b. The number whose prime factors are 2,2,3 and 5 is

d. Quotient × divisor + remainder =

e.
$$-- - \times 0.01 = 6.751$$

f.
$$(13.5 - 5.13) \div 0.1 + 16.3 =$$

2. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. The value of the expression:
$$77 \div (3 + 4) = 11$$
 is zero.

c. If
$$32 \times 142 = 4,544$$
, then $4,545 \div 32 = 142 R1$

d. Prime factorization of 20 is
$$2 \times 2 \times 3$$

f.
$$35 \times 94 = [3 \times 9] + [3 \times 4] + [5 \times 9] + [5 \times 4]$$

3. Write the expression that matches the clues then, evalute the expression.

d. Multiply 3.5 by 100. Next, subtract 54.5, then, add 13.4, last, divide the result by 0.01.

4. Match.

1. •
$$[7.8 - 3.4] \times 1.1$$

$$3. \circ [3.4 + 7.8] \times 1.1$$

Į.	Write the rule for each pattern with a variable	, then	complete	the	pattern	by	finding	the
	missing values.							

... Using the information given , list the first five numbers in the pattern .

d. starting number: 2 Rule:
$$n \times 3 - 1.5$$

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

4. Find GCF and LCM of the two numbers 12 and 18.

Cumulative Assessment Till lesson 7 unit 6

1.	Com	plete.
----	-----	--------

a.	In the pattern:	1,2,4,8,16.	the Rule is
	ALL ALLES PROPERTY OF THE	17277707107	tile l/dfe i3

b.
$$461.12 \div 10 =$$

d.
$$12.34 \times 0.5 \approx$$
 [to the nearest tenths]

2. Put (/) to the correct statement and (X) to the incorrect statement.

c.
$$7.35 \div 0.5 = 73.5 \div 5$$

d. If
$$32 \times 254 = 8{,}128$$
 then $8{,}129 \div 32 = 254$

e.
$$3.925 \div 35 = 112 \text{ R6}$$

3. Find the Result.

a.
$$321.41 + 36.791 =$$

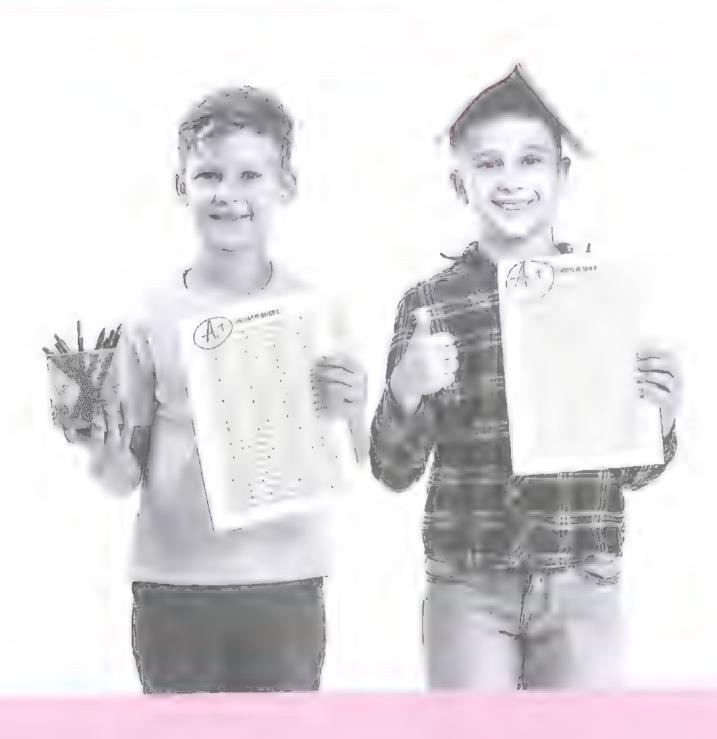
4. a. When Shams was 6 years old, her brother Tamer was half her age. How old will Tamer be when Shams is 12?

b. complete the table to show Sham's and Tamer's ages.

Sham's Age	Tamer's Age
15	A.
17	B.
C.	16
22	D.
E. —	21

5. If the sum of two numbers is 50.1 and the smallest number of them is 5.999 What is the greatest one?

Final Assessments



Model

1. Choose the correct answer.

a.
$$1.5 - 0.75 =$$

A. 1.8

B. 7.5

C. 0.75

D. 1.25

b. The number 11 has

factors.

A. 1

B. 2

C. 3

D. 4

c. $\times 9 = 9.000$

A. 10 B. 100

C. 1,000

D. 10,000

d. 3.5 L - 1500 mL = L

A. 2

B. 5

C. 2,000

D. 5,000

2. Complete.

a.
$$1,227 \div 12 = 102 R$$

b. In the pattern: 3,5,7,9,11, ... the rule is

c. The value of 3 in the number 5.137 is

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a.
$$45.23 \times 10 = 4.523$$

b.
$$13 + 7 \times 0.1 = [13 + 7] \times 0.1$$

c. 2 hundredths – 18 thousandths = 2 thousandths.

4. Match.

$$123 \div 10$$

1.

123

 12.3×10

2.

12.3

c. 0.1 + 0.02 + 0.003

3.

1.23

d. • 5,5 - 4.27

4. 123 thousandths

 $\int_{0.8}^{\infty}$ a. By using the Area model calculate the product of 75 \times 23

b. If Mona has 1.275 kg. of flour. She wants to make a cake for her children. If the cake needs 2 kg. of flour. How many more flour does Mona need?



1.	Complete
-	OCH INDICATE

a.
$$1f4.71 + K = 9.2$$
, then $K =$

b.
$$0 \div 23 =$$

d.
$$0.3 \times 0.2 =$$

2. Choose the correct answer.

A.
$$10 + 5 + 0.1 + 0.005$$

C.
$$10 + 5 + 0.1 + 0.05$$

D.
$$10 + 5 + 0.01 + 0.005$$

b.
$$700 g = _{kg}$$

c. If
$$12 \times 302 = 3,624$$
 then $3,625 \div 12 =$

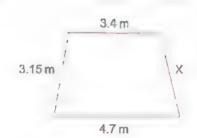
. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

c.
$$2.345 \times 0.01 = 234.5$$

4. Match.

5. a. Find GCF and LCM for the two numbers 9 and 12

b. If the perimeter of this shape is 13.5 meters what does x equal?



Model

 \bot Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a.
$$4.16 \times 2.3 > 41.6 \times 2.3$$

b. The value of the expression
$$5 \times 5 + 5 = 5 \times (5 + 5)$$

c.
$$\frac{3}{1000} + \frac{3}{100} + \frac{3}{10} = 0.333$$

- 2. Complete.
 - a. The common factor for all the numbers is

b.
$$9 \times 27 = [9 \times _{}] + [9 \times 7]$$

- Choose the correct answer.
 - a. By using the information what is the first four numbers pattern? Starting number: 2 Rule: $[n+1] \times 2$

ing Assessments

b. $8.43 \times 0.2 \approx$

(to the nearest hundredths).

- A. 1.686
- **B.** 1.7
- C. 1.69
- D. 2

- c. $1,515 \div 15 = -$
 - A. 15
- B. 11

- C. 101
- D. 1001

- d. The LCM of 6 and 10 is
 - A. 60
- B. 30
- C. 15
- D. 45

4. Match.

By using the fact $112 \times 35 = 3920$

- a.
- 11.2×3.5
- 1.12×3.5
- $3920 \div 35$

- 1. 3.920
- 39.2
- 112

5. a. Use the area model to solve $2,576 \div 23$

b. If 18 plums are packed each 3 to a bag. then 3 how many bags will be there?



1. Choose the correct answer.

- a. There are _____ milliliters in 18 liters.
 - A. 18
- B. 180
- C. 1,800
- **D**. 18,000

- b. 2 thousandths × 4 = ____
 - A. 8
- B. 0.8
- C. 0.08
- **D.** 0.008
- c. Which expression matches the clue «Add 30 to 25 and divide the result by 0.5»?

 - **A.** $30 + 25 \div 0.5$ **B.** $0.5 \times (30 + 25)$
- C. $[30 \pm 25] \pm 0.5$
- **D.** $30 \div 0.5 + 25$

- d. Which is Not a common multiple of 9 and 6?
 - A. 42
- B. 54
- C. 36
- D. 18

lete.

a. 7 hundredths - 17 thousandths =

thousandths.

c.
$$5.7 \div 100 =$$

. Put (/) to the correct statement and (X) to the incorrect statement.

b.
$$73.526 \div 0.01 = 7352.6$$

4. Match.

5. a. Hala has a restaurant, she sold 301 Kebabs in March, she sold 532 kebabs in April. If she makes each kebab with 51 grams of meat.

How many grams of meat did she use in March and April?

b. Use the partial quotients strategy to solve the problem 576 \div 18

Model

1. Complete.

b. ____ is the only even prime number.

2. Choose the correct answer.

a. The divisor in the equation $36 \div 4 = 9$ is

A. 36

B. 4

C. 9

D. zero

b. 2.51 × _ _ = 0.0251

A. 100

B. 0.001

C. 0.01

D. 0.1

c. Which is the first step in evaluating $28.1 - 3.5 \times 0.2 + 29 - 4$?

A. 28.1—3.5 B. 3.5 × 0.2

 \mathbf{C} . 0.2 + 29

0.29 - 4

d. 2 + 0.05) 1.7 + 0.7

A. <

C. >

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 3 is a composite number.

b. 4.7 + 3.6 = M Represent an expression.

c. The Rule in the pattern 10, 20, 30, 40, _____ is n + 10

4. Match.

 $(50 \times 30) + (50 \times 7)$ + $(5 \times 30) + (5 \times 7)$

704 × 65

700 b. 60 42,000 240 5 3,500 20

 55×37

 750×13 C. 4

3. . 1,350

135 × 10 d. 🕴

9,750 4.

- 5. a. Find the result:
 - 1. 4,865 ÷ 32

2. 321 × 15

b. In one year, a school used 15,730 red papers, 4,510 Fewer blue papers than red papers. How many papers were used in all?



- 1. Match.
 - a. $7.351 \div 0.01$
 - **b.** 735.1 × 0.1
 - c. 73.51 × 100
 - d.

 √ 735.1 ÷ 100

- **1.** 7351
- 2. 7.351
- 73,51
- 4. 735.1

- 2. Choose the correct answer.
 - a. The GCF of 10 and 15 is
 - A. 10
- **B**. 15
- **C**. 5
- **D**. 30
- **b.** A group of 48 people want to travel by bus, each bus ticket costs 175 L.E. How much do they need to pay in all?
 - A. 6,200
- **B**. 5,650
- C. 840
- **D.** 8,400

- **c.** $3,003 \div 33 =$
 - A. 19
- B. 91
- C. 109
- **D.** 901

- d. 0.735 L = _____mL.
 - A. 735
- **B.** 7.35
- C. 73.5
- D. 7350
- \square Put (\checkmark) to the correct statement and (X) to the incorrect statement.
 - a. $35.469 \approx 35.47$ (to the nearest hundredths).
 - **b.** 23 × 14 = 312
 - c. If $25 \times 34 = 850$, then $2.5 \times 3.4 = 8.5$

4. Complete.

- a. $1.477 \div 12 = 123 R$
- b. 0.28 ÷ 0.04 = ___ ÷ 4
- _ _ [in the same pattern] c. 7.7, 6.6, 5.5, 4.4, ____,

5. a. Find the result.

1. 5.3 - 1.624

2. 21.57 + 361.983

b. Find LCM of 18 and 24

Model

1. Complete.

- a. The place value of the digit 5 in the number 3.514 is
- b. 0.007 + 0.7 + 70 =

c. If k = 3.4 = 2.17, then k =

Put (/) to the correct statement and (X) to the incorrect statement.

- **a.** 1 is a prime number. () **b.** $314.52 \times 0.01 = 31,452$
- c. $2,323 \div 23 = 11$

3. Choose the correct answer.

- a. 4.1 × 1.1 = -
 - A. 45.1 B. 451
- C. 0.451
- D. 4.51

- b. If $26 \times 352 = 9,152$. Then, $9,155 \div 26 =$
 - A. 352
- **B.** 352 R1
- C. 352 R2
- D. 352 R3
- c. What is the ones digit of the product of 456×24 will be without solving the whole problem? _ _ _ _
 - A. 3
- B. 4

C, 5

D. 6

- d. 1 and 7 are the common factors of
 - A. 2 and 7
- B. 2 and 14
- C. 7 and 12
- D. 7 and 14

4. Match.

a. 1237 tenths

1. 1.273

b. 1273 hundredths

2. 12.73

c. 1273 thousandths

- 3. 127.3
- a. Ola saved 17.25 pounds and her brother Hosam saved 8.5 pounds. Find the sum they saved.
 - b. Write the expression that matches the clue. Then, evaluate the expression. Subtract 3.1 from 4.6, then multiply the result by 0.01



1. Put (/) to the correct statement and (X) to the incorrect statement.

a. The LCM of 6 and 15 is 60

()

b. $56 \times 43 = (50 \times 40) + (50 \times 3) + (6 \times 40) + (6 \times 3)$

()

c. If $4 \times 6 = 24$, then $4 \times 600 = 2,400$

()

2. Choose the correct answer.

- a. $462.3 \div 0.23$ 4623 \div 2.3
 - A. >
- B. <

C. =

b. Which expression matches the clue "Giovanni bought 60 fish. He put 5 flsh in 9 bowles each"

How many fish are left with Giovanni?

- A. $[60-5] \times 9$
- **B.** $[60-9] \times 5$
- C. $60 + 5 \times 9$
- **D.** $60 5 \times 9$

- c. 5,000 not equals _____
 - A. 5 × 1,000
- **B.** 50 × 100
- C. 500 × 10
- **D**. 500 × 100

- d. 4 is a factor of
 - A. 40
- **B**. 39
- **C.** 38
- **D.** 37

Final Assessments

3. Complete.

- a. The value of 7 in the number 5.167 is —
- b. 4 thousandths + 3 thousandths = thousandths.

- c. $91.364 \approx$ [to the nearest hundredths]

4. Match.

- 7.3 + 2.01a.
- b. 6.4 - 3.2
- C. 2.1×0.3
- d. $4.5 \div 0.5$

- Thirty-two tenths
- 63 2. 100
- 3.
- 9.31

5. a. Solve the following equations:

- 1. T- 2.45 = 0.26
- 2. k + 2.40 = 3.04
- **b.** Use the order of operation to evaluet $5.5 \div 5 \times 10 10$

Model

1. Choose the correct answer.

- a. The GCF of 20 and 30 is
 - A. 1
- B. 4

C. 5

- **D**. 10
- b. There are 3,000 grams in kilograms.

 - A. 3 B. 30
- C. 300
- D. 3.000

- c. $320 \times 15 =$

 - **A.** 48 **B.** 48 tens.
- C. 48 hundreds.
- D. 48 thousands.

- d. 4150 ÷ 29 143 R
 - A. 4
- B. 2

- C. 1
- D. 3

2. Complete.

- a. $89.36 \div 100 = 89.36 \times _$
- b. 32,16,8,4, _____ (in the same pattern)
- c. 3+3 tenths +3 hundredths =

Put (√) to the correct statement and (X) to the incorrect statement.

- a. $1.1 \times 4.5 > 0.459$
- b. All the factors of 12 are 1, 2, 3, 4 and 6
- c. 7.41 + 3.2 1.5 represent an expression.

4. Match.

- The next term in the pattern 3,5,7,9,
- **b.** ϕ 55 ÷ $\{2+9\}$ 5
- The third term in the
 c. ↓ pattern which Rule
 [n 1] × 3 starting with 2

- 1. 6
- 2. 11
- 3. zero

5. Find.

- a. 32.75 + 16.5

c. 32×12

- b. 11.1 5.7
- d. 2,743 ÷ 13

Model

19

1. Choose the correct answer.

- a. 42.18 × 10 = ____
 - A. 4.218
- B. 421.8
- C. 42.18
- D. 4218

- b. 3.2 + 4.05 $\boxed{}$ $7.05 + \frac{1}{2}$
 - A. >
- B. =

C. <

c. The number 7 has

factors

A. 1

B. 2

C. 3

D. 4

d.

____ × 5 = 5,000

A. 1,000

B. 100

C. 10,000

D. 100,000

2. Complete.

a.
$$130 \times 30 =$$

b.
$$36.479 \approx 36.50$$
 (to the nearest ___ ____

Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 18 Liter = 1800 mL.

) | **b.** 2.56 + x = 3.8 is an equation.

c. $15 + 5 \times 4 = [15 + 5] \times 4$

()

4. Match.

5. a. Find GCF and LCM of 20 and 30

b. A jewellery maker has 0.85 kg of gold used to make special type of identical rings. The mass of one ring is 4 g and the maker has 226 g of remaining gold.

Calculate the number of rings can be produced?



PRIMARY FIRST TERM





يُصــرف مجـــاثًا مِحَ الكـــتاب

GUIDE ANSWERS







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c. 2

Revision 1

- 1. a. A
- b. D
- c. C
- **d**. B

- e. A
- f. B
- 2. a. 20
- b. 2,400
- c. 123,920
- d. 25
- e. 16.32.40.56 f. 35 + x = 100
- 3. a. <
- b. -
- c. >

d. =

4. a.

- ② 27
- + 2,386 7.856

① 5,470

- 108
- + 270 378
- c. 245
 - 3 735 - 6 13
 - _ 12 15
 - _ 15
- 5. What Bassem will read $= 128 \times 9 = 1,152$ pages

Revision 2

- 1. a. 2 b. 7.15
 - d. 975
- e. 116

e. X

c. 6 f. 0.04

C. X

2. a. 🗸

Appeared of Heritage.

- b. x
- d. 🗸
- f. X
- 3. a. Fourteen and three tenths
 - b. Six and eight hundredths
- 4. a. 18.649
- b. 1,200
- c. 2,572
- d. 213
- 5. The number of passengers $= 896 \div 8 = 112$ passengers

Revision

- on E
- b, •∕ ε. X
- d. 🗸

1. a. X

- e. v f. v
- 2. a. D b. B c. C
 - d. D
- e. C
- f. D
- **3.** The order is: 5,700,624 , 5,700,726 , 6,670,785 , 6,785,000 , 7,456,232
- 4. a. =
- b. >
- C. <
- d. <
- **5.** Factors of 30:1,2,3,5,6,10, 15,30

- Factors of 36:1:2:3:4:6:9:12
- 18 , 36
- Common factors: 1,2,3,6
- GCF=6

Revision 4

- 1. a. 4 b. → 3 c. 2 d. → 1
- c. —≠2

2. a. V

d. 🗸

- b. X
- c. X f. X

- 3. a. 59,755
- b. 141

b. 57.04

- d. 400
- e. 284 f. 0
- 4. a. 7.15
 - c. 9.36
- 5. The number of cans = 26 × 52 = 1.352 cans

Decimal Place Value and Computation

» Concept 1: Decimal to the Thousandths Place

» Concept 2: Adding and Subtracting Decimals



Concept

Decimal to the Thousandths Place

Limoth

1														
	Mill ards		Millions			Thousands			Ones			Decima.s		
	0	Н	T	0	Н	Т	0	H	Т	0	ı .	Tenths	Hundreaths	Thousandths
a.								3	5	2	,	7	4	
ь.					6	4	2	5	0	1		5	1	
					["		_	_		_				\vdash

265940013.9

- 2. a. 0.24
- b. 0.035

4005000.003

- c. 0.008
- d. 7.014
- e. 4.004
- f. 1.5
- g. 9.700
- h. 20.040
- i. 7,000.48
-]. 3,000,000.142
- k. 2,000,000,000.003
- L 0.408
- **m.** 5.002
- n. 3,000,200.035
- o. 1.111
- p. 2109
- q. 340.072
 - 072 r. 2,032,000.61
- s. 3,000,000,017.48
- t. 527,700,530,84
- a. Five hundred four and twenty one hundredth

- Four and two hundred thirtyone thousandth
- c. Forty nine and eight hundredth
- d. Five hundred thirty-four thousandth
- e. Four thousands thirty and seven tenth
- f. Four and twenty nine thousandth
- g. Seventeen and one hundred seven thousandth
- h. one and eight hundred two thousandth
- I. Six hundred eight thousandth
- j. eight and two thousandth
- 4. a. Hundredths 10.09
 - b. Thousandths , 0.002
 - c. Tenths > 0.7
 - d. Hundredths > 0.08
 - e. Tens , 50
- 5. **a.** 0.4 **b.** 0.008 **c.** 2 tens
 - d. 9 ones e. 0.05
- 6. **a.** 0.349 **b.** 0.185 **c.** 0.673
 - d. 0.057 e. 0.008 f. 0 204
- Shade by yourself.
- 8. 7 thousandths

	Millards	Millions			Thousands			Ones			A	Decimals	
	0	Н	Т	.0	Н	Т	0	Н	Т	0		Tenths	Hundredths
а.	9	7	7	6	4	3	2	2	1	0			
b.			1	0	2	2	3	4	6	7	٠	7	9

- 10. a. three tenths
 - b. thirty thousandths
 - c. three thousandths
 - d. three hundreds
 - e. 30 tenths

11.

Bird One:

a. 6

b. 0

c. 5

Bird Two:

a. 2

b. 1

c. 7

Bird Three:

a. 8

b. 0

c. 7

- 12. a. 80 octane petrol
 - b. 95 octane petrol

Answers of multiple choice questions

3. C

C

D

6. C

Exercise 2

1. a. $85 \times 10 = 850$

Thousands	Ones			P	Da	ecimals
0	H	Т	0		Tenths	Hundredths
		8	5			
	8	5	0			

- increased
- -8 increased :80 :800
- -5 increased 15 150

 $b.57 \div 10 = 5.7$

Thousands	0	ne	25		Di	ecimals
0	HTO			Tenths	Hundredths	
		5	7	,		
			5		7	

- decreased
- -5 , decreased , 50 , 5
- 7, decreased, 1, 0.7

 $c.6.5 \times 10 = 65$

Thousands	Ones			4	Decimals		
0	Н	Т	ТО		Tenths	Hundredths	
			6		5		
		6	5				

- increased
- -6 increased 6 60
- -5 increased , 0.5 , 5

 $d.7.3 \times 100 = 730$

Thousands	Ones			,	D	ecimals
0	Н	Т	0		Tenths	Hundredths
			7		3	
	7	3	0			

- -increased
- 7 sincreased 7 700
- -3 increased 10 3 30

 $e.345 \div 10 = 34.5$

Thousands	C	ne	:5	Decimals			
0	Н	Ţ	0	Tenths	Hundredths		
	3	4	5				
		3	4	5			

- decreased
- -3 a decreased +300 +30
- -4 decreased 40 4
- -5 decreased 5 0.5

 $f. 1890 \div 100 = 18.9$

Thousands	0	Ones			De	ecimats
0	Н	Ţ	0		Tenths	Hundredths
1	8	9	0			
		1	8	-	9	

- decreased
- -1,000,10 decreased
- -8, decreased, 800, 8
- -9, decreased, 90, 0.9

Form the place-value chart by vourself.

> a. 25 d. 14.52

b. 145.2 e. 4.300

h. 21.8

c. 750 f. 1.812 9

a. 0.49

i. 50.76

i. 4.582

3.

a. 34.527

Thousands	Ones				Decimals		
٥	Н	Т	0	•	Tenths	Hundredths	Thousandths
		3	4		5	2	7

-1st way (expanded form):

 $30 \pm 4 \pm 0.5 \pm 0.02 \pm 0.007$

- -2^{nd} way: 30 + 4 + 0.527
- -3rd way: 34 + 0.5 + 0.02 + 0.007

b. 21.045

WI E 11-0 1 7	_							
Thousands		One	5	,	De	ecimuls		
0	Н	ī	0		Tenths	Hundredths	Thousandths	
		2	1	-	0	4	5	

- -1st way [expanded form]:
- 20 + 1 + 0.04 + 0.005
- -2nd way: 21 + 0.045
- -3rd way: 20 +1 + 0.045

c. 42.007

Thousands	(One:	S	. Dec		cim	cimals	
0	Н	Т	0		Tenths	Hundredths	Thousandths	
		4	2		0	0	7	

- -1st way [expanded form]: 40 + 2 + 0 007
- 2nd way: 42 + 0.007
- -3^{rd} way: 40 + 2007

d. 302.504

Thousands	(One	5		Decimals		
0	H	Т	0	+	Tenths	Hundredths	Thousandths
	3	0	2		5	0	4

- -1^{st} way (expanded form): 300 + 2 + 0.5 + 0.004
- -2nd way: 300 + 2 + 0.504
- -3^{rd} way: 302 + 0.504

e. 231.128

1	6, 231,120										
	Thousands	(One:	5	n	Decimals					
	0	Н	Т	0	4	Tentns	Hundredths	Thousandths			
		2	3	1		1	2	8			

- -1st way (expanded form):
- 200 + 30 + 1 + 0.1 + 0.02 + 0.008
- 2nd way: 200 + 30 + 1 + 0.128
- -3rd way · 230 + 1 + 0.128

f. 508.17

Thousands	- 1	One	5	4	Decimals		
0	Н	Т	0		Tenths	Hundredths	Thousandths
	5	0	8		1	7	

- 1st way [expanded form] : 500 + 8 + 0.1 + 0.07
- -2^{hd} way: 500 + 8 + 0.17
- 3rd way: 508 + 0.1 + 0.07

The ways may vary

- 4. a. 7.349
- b. 404.044
- c. 5,049.207
- d. 700.409
- e. 78 613
- f. 410.209
- g. 540.809
- h. 76,004.295
- i. 8,073.109
- 5. a. 2 + 0.04 + 0.001
 - b. 10+4+0.3+0.002
 - c. 0.07 + 0.009
 - d. 80 + 4 + 0.3 + 0.06 + 0.009
 - e. 400 + 0.07 + 0.008
 - f. 3,000,000 + 10 + 7 + 0.08 + 0.001

6. a. 4

- b. 0.006
- c. 120.204
- d. 4.305
- e. 0.012
- f. 434,028
- g. 70 0.008
- h. 10,6,0.7
- i. 0 003
- i. 0.05
- k. 0.5
- L 0.82
- 7. a. 7 + 0.842
 - **b.** 700 + 84 + 0.2
 - c. 70 + 8 + 0.4 + 0.02
 - d. 78.000 + 400 + 20
 - e. 7,000 + 800 + 40 + 2

Answers of multiple choice questions

- 1. C
-) R
- 7

- 4. D
- .
- 6.

- 7. A
- 8.
- 9. A



1.

a. 4.08 < 4.8

	Ones			D	ecima	ts
Н	Т	.0	•	Tenths	Hundredths	Thousandths
		4		0	8	0
		4		8	0	0

b. 15.3 = 15.300

	Ones			D	ecima	ls
н	T	0	4	Tenths	Hundreaths	Thousandths
	1	5	٠	3	0	0
	1	5		3	0	D

c. 230 03 > 230.009

	Ones		,	D	ecima	ls
Н	Т	0	*	Tenths	Hundredths	Thousandths
2	3	0		0	3	0
2	3	0		0	0	9

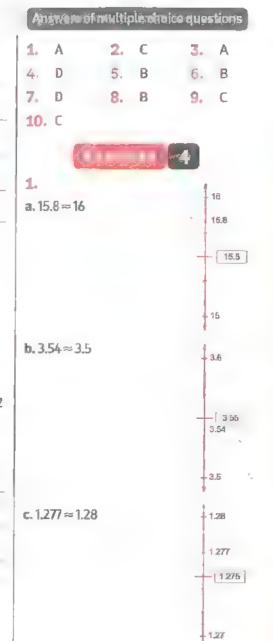
2.

- a. > b. < c. < d. <
- e. = f. < g. < h. >
- i. > j. k. < L =
- m. > n. > o. = p. >
- 3.
- a. < b. > c. < d. >
- e. =
- 4.
- a. > b. < c. =
- e. > f. < g. < h. <

d. >

i. >	j	k. <	ŧ. =
m. <	n. >	o. <	p. <
q. >	r. <		
5. 4.3	34 , 4.7		

- 6. 2.102 : 2.014
- 7. 1.49
- 8. 20.001
- 9.
- a. The order is: 4.015 ,4.136 ,4.150 ,4.157
- **b.** The order is : 1.166 1.616 1.662
- c. The order is : 2.668 2.868 2.868
- d. The order is : 4 572 , 45.008 , 45.072 , 45.702 , 45.729
- e. The order is: 8.012 ,80.012 ,80.09 ,80.102 ,80.21
- 10. Youssef ran the greater distance
- 11. 24.38 , 2.438 (answers may vary)
- 12. 8.800 , 8 8 (answers may vary)



d. 3	1,4562 ~ 3,45	16	4 3.457
			3 456
			3.4562
			3.456
2.	à. 1	b. 0	
	c. 1	d. 10	
	e. 52	f. 10	
	g. 601	h. 1	
	i. O		
3.	a. 13.8	b . 83.	9
	c. 90.1	d. 0.2	
	e. 44.0	f. 3.9	
	g. 170.6	h. 0.1	
	i. 502.4		
4.	a. 76.51	b. 52.61	c. 52.12
	d. 0.74	e. 1.00	f. 3.01
5.	a. 2 051	b. 0.047	c. 4.680
	d. 20.000	e . 0	·f. 0.999
б.	a. 36.9	b. 5,55	c. 2
	d. 0.09	e , 0.1	f. 20.37
	g. 4.00	h. 0	i.1

k. 1.1

L 1.023

		Round to the nearest							
	Number	Whole number	Tenth	Hundredth	Thousandth				
2.	123.3569	123	123.4	123.36	123.357				
b.	528.2025	528	528.2	528,20	528.203				
c	43 5426	44	435	4354	43.543				
d.	21.84792	22	Z1.8	21.85	21 848				
e.	0.5297	1	0.5	0.53	0,530				
f.	0.0546	α	0,1	0.05	0.055				
g.	4.2688	4	4.3	4.27	4,269				

- 8. $147.72 \text{ km} \approx 147.7 \text{ km}$
- 9. 73.255 km ≈ 73.26 km
- **10.** 125,45 m ≈ 125,5 m 89,52 m ≈ 89,5 m
- 11. The greatest decima, less than one is: 0.6543
 0.6543 ≈ 0.7 (to the nearest Tenth)
 0.6543 ≈ 0.65
 (to the nearest Hundredth)
- 12. The greatest decimal less than one is: 0.0257
 0 0257 ≈ 0.03
 [to the nearest Hundredth]
 0.0257 ≈ 0.026
 [to the nearest Thousandth]

- 13. 0.328 0.273 (decimals may vary)
- 14. 12.251 12.254 12.249 [decimals may vary]
- **15.** 86.3975 , 86.3978 , 86.3981 [decimals may vary]
- **16.** a. 73.625 ≈ 73.63 b. 200.081 ≈ 200.08
- 17. No, 36 921 rounds 37 which is outside the range listed
- 18. a. 2.788
- b. 20.1226
- c. 9.2366
- d. 19.995

Answers of multiple thouse questions

- 1. D
- 2. C
- 3. B

- 4. E
- 5. D
- 6. B

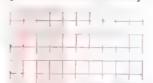
- 7. B
- 8. C
- 9. C

- 10. B
- 11. C
- 12. 8

5

S-SHEEPING!

- 1. a. 0.5 + 0.5 = 1
 - b. 3 + 8 = 11
 - c.8 + 4 = 12
 - d.10 + 5 15
 - e. 43 + 42 85
 - f. 4.98 + 5.02 = 10
- 2. a. 0.22 + 0.38 = 0.60
 - **b.** $0.55 \pm 0.25 = 0.80$
 - c. 0.18 + 0.71 0.89
 - **d.** 0.21 + 0.54 = 0.75
 - **e.** $0.11 \pm 0.32 = 0.43$
 - f. 0.04 + 0.13 = 0.17
- 3. a. 0.1 + 0.2 = 0.3 [to the nearest Tenths]



Models may vary

Thousands	Ones			ı,	D	ecimals
0	Н	T	0		Tenths	Hundredths
			0	,	1	3
			0		2	3

0.13 + 0.23 = 0.36

b. 01+07 0.2 [to the nearest Tenths]



Models may vary

	•					
Thousands	Ones				D	ecimals
0	Н	1	0		Tenths	Hundredths
			0	٠	0	5
			0		0	5

0.05 + 0.05 = 0.10

c. 0.5 + 0.8 = 1.3 (to the nearest Tenths)



Models may vary

Thousands	Ones				De	ecimals						
0	Н	Т	o		Tenths	Hundredths						
			0		4	5						
			0		8	4						

0.45 + 0.84 = 1.29

d. 0.9 + 0.9 = 1.8
 (to the nearest Tenths)
 or 1.0 + 1.0 = 2
 (to the nearest ones)



Models may vary

Thousands	Ones		,	B	ecimals	
0	Н	Т	0		Tenths	Hundredths
			0		9	2
			0	-	8	9

$$0.92 \pm 0.89 = 1.81$$

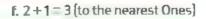
e. 1.0 + 0.4 = 1.4 [to the nearest Tenths]



Models may vary

Thousands	Ones			De	ecimals
0	Н	T	0	Tenths	Hundredths
			0	9	7
			0	4	2

$$0.97 + 0.42 = 1.39$$



Models may vary

Thousands	Ones			1	D	ecimals
0	Н	Т	0.		Tenths	Hundredths
			1	,	9	a
			0		6	2

1.9 + 0.62 - 2.52

4.	a. 0.985	b. 2.72	
	c. 5.76	d. 25.13	
	e. 14.002	f. 1,058.83	
	g. 107.516	h. 50.000	
	i. 22.033		

	**		
5.	a. 48.88	b. 21.9	c. 11.95
	d. 1.305	e. 10.007	f. 15.75
	g. 241.00	h. 23.429	
6.	a. 99.58	b. 48.00	c, 14.562

d. 269.015 e. 1,600.000 f. 25,777

- 9. 94.635 ≈ 100 liters
 [to the nearest Hundreds]
 100 + 100 + 100 + 100 = 400 liters
 He can lift about 400 liters
 [Answers may vary]
- 34.99 ≈ 35 (to the nearest ones)
 4.01 ≈ 4 (to the nearest ones)
 35 + 4 = 39 km
 She rode about 39 km
 She didn't meet her goal.
- 11. $54.20 \approx 54$ (to the nearest ones) $45.75 \approx 46$ [to the nearest ones] 54 + 46 = 100 L.E.

They have about 100 L.E.
They have enough money

Answers of multiple shaire questions

			_		
	C	2.	A	3.	C
	Α	5.	A	6.	D
7.	D	8.	D	9.	В
.0.	В	11.	В	12.	C

6

- 1. a. 2.6 1.6 = 1 [to the nearest Tenths]
 - b. 2.4 1.2 = 1.2 (to the nearest Tenths)
 - c. 36 11 = 25 (to the nearest ones)
 - d. 214 114 = 100 (to the nearest ones)
 - e. 0.95 0./3 = 0.22 (to the nearest Hundredths) (Answers may vary)

b.
$$0.2 - 0.04 = 0.16$$

c.
$$0.57 - 0.28 = 0.29$$

e.
$$1.22 - 0.27 = 0.95$$

3. a.
$$0.67 - 0.49 = 0.18$$





X			
X			
X			
X			
Х			
X			
X			
X			
X			

$$c. 0.39 - 0.13 = 0.26$$

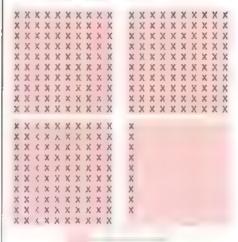
ХХ		
XX		
XX		
X		
X		
X		
X		
X		
X		
2		
A		

d. 1.23 - 1.02 - 0.21



X	X	Х	X	X	Х	X	X	Х	X	XX
X	X	Х	Х	Х	Х	Х	X	Х	X	XX
X	X	χ	Х	Х	χ	Χ	X	×	X	XX
X	X	Х	Х	X	K	Х	Х	Х	X	XX
X	X	×	Х	х	Х	Х	X	Х	X	XX
X	Х	χ	Х	x	Х	Х	X	Х	X	XX
X	Х	X	Х	Χ	Х	Χ	Х	Х	X	XX
×	Κ	Χ	X	Χ	Х	Χ	×	Х	X	XX
×	Х	Х	X	Х	Х	Χ	X	X	Х	XX
X	X	Х	Х	Х	χ	X	Χ	Х	Х	X

f. 4.14 3.09 - 1.05



- a. Estimate: 3.9 1.2 = 2.7
 [to the nearest Tenths]
 Actual: 3.94 1.23 = 2.71
 - b. Estimate: 30 12 = 18 [to the nearest ones]Actual: 29.98 – 11.99 17.99
 - c. Estimate: 1 1 0
 [to the nearest ones]

 Actual: 0.97 0.82 = 0.15

- d. Estimate: 5.1 4.2 = 0.9(to the nearest Tenths)
 - Actual: 5.05 4.15 = 0.90
- e. Estimate: 4.5 4.3 = 0.2 (to the nearest Tenths)

Actual:
$$4.45 - 4.32 = 0.13$$

- 5. a. 0.250
- b. 0.399
- c. 0.125
- d. 3,000.122
- e. 2,026 496
- f. 2,628.85
- 6. a. 2.111
- b. 1.333
- c. 1.022
- d. 52.15
- e. 0.011
- f. 12.381
- g. 10,52
- h. 533.315
- 7. a. 8
- b. 2.6
- c. 22.79
- d. 52.15
- e. 2.984
- f. 11.234
- g. 21.292
- . 11.234
- 9. 21.
- h. 45.21

8.

- a. < b. < c. < d. <
- e. > f. < g. < h. =
- 10. a. 93,9,3 b. 45,4,5
 - c. 17,1,7 d. 26,2,6
 - e. 53,5,3 f. 758,7,5,8

Answers of multiple choice questions

- C 2. **3**. A
- 4 A 5. A 6. D
- 7. B 8. B 9. B
- 10. C

Exercise 7

- 1. What they have = 3.95 + 6.3 = 10.25 L.E.
- 2. The profit = 366.95 306.7 = 60.25 L.E.
- 3. The remainder = 53.75 35.05 = 18.7 L.E.
- 4. What he paid = 9.75 + 8.40 = 18.15 L.E.

 The left with him = 35 18.15 = 16.85 L.E.
- 5. What they have = 24.75 + 15.25 = 40 L.E.
- 6. The difference 9.80 4.25 = 5.55 pounds
- 7. The price of the items
 = 998 + 4575 + 70.25
 = 215.8 pounds
 Sally can not buy all what she wants, because they will cost more than she has.

The total mass = 113.39 + 38.1 = 151.49 kilograms 1.

Thousands	Ones				Decimals		
0	Н	Т	0		Tenths	Hundredths	Thousandths
1	9	4	1		2		
	6	8	7	4	9		

- 2.1.941.2 + 687.9 = 2.629.1 kilometers
- 10.
- 1.140.01 kilometers > 249.448 kilometers
- 2.350 249.448 = 100.552 kilometers
- 11. The width of the bridge = 67.3 11.7 = 55.6 meters
- 12. What Rami traveled = 16.7 + 16.7 = 33.4 kilometers
- 13. What he needs to travel
 = 16.7 3.25 = 13.45 kilometers
- = . The difference = 544.3 6.44 = 537.86 tons

The weight of the fish = 53.25 + 46.8 = 100.05 kilograms

- 16.
- 1. The total length = 104,902 + 104,902 + 201168 = 410,972 cm
- 2. The difference = 201.168 30.2 - 170.968 cm
- 3. The difference = 35.17 29.255 = 5.915 cm

rà e		-
6		

- 1. a.D b.B c.D d.C e.C f.D
- 2. a. 10 b. 8 c. 46 112 d. 3 , 2 , 9 e. tenths f. 13,136.83
- 3. a. \(\nu \) b. \(\times \) c. \(\times \) d. \(\nu \) e. \(\times \) f. \(\nu \)
- 4. a. → 3 b. → 4 c. → 1 d. → 2
- 5. The total distance = 1.215 + 2.09 = 3.305 km
- 6. The greater decimal number = 40.1 4.992 35.108

Answers of unit

Number Relationships

» Concept 1 : Expressions , Equations and the Real World

» Concept 2: Factors and Multiples





Expressions, Equations and the Real World



1.

	Equation	Expression	Neither
3.6 + x + 5.45		V	
2+3-4+1	4		
356 + 4.23 = x	V		
Sum of two numbers is 15			V
8 43 · 2.34 - y + 2.85	V		
15.68 more than a number			V
k - 15.8 + 718		•	

- 2. a. equation
- b. expression
- c. expression
- d. expression
- e. equation
- f. equation
- g. equation
- h. equation
- i. expression
- i. equation
- k. expression
 - L expression
- m. equation
- n. expression
- o. expression
- p. neither
- **q**. neither
- r. equation
- 3. a. x + 6.5 = 9
 - b. 1.7 + a 2.8
 - c. y 9.23 = 23.15
 - d. m + 14.15 = 17.35
- 4. a. 3879 + 3885 = x
 - b. 38.85 3795 = a

- c. 38.85 37.5 = h
- d. 38.79 + 37.95 + 38.85 = 6
- 5. [1] 40-25=x [2] 25+x=40
 - [equations may vary]
- (1) 42.5 38.75 = a
 (2) a + 38.75 42.5
 (equations may vary)
- 7. a. "x" represents the total price of the plane and the car.
 - b. "y" represents the difference between the bear's price and the car's price,
 - c. "b" represents the amount of money Sameh need to buy the plane.
 - d. "a" represents the amount of money Sameh need to buy the bear.
 - e. "d" represents the total price of the three toys.
 - f. "m" represents the amount of money Sameh need to buy the bear and the car.
- 8. 1. B
 - 2. A , C
- 'a C
- JU ASC
- 11. B

- a. m 425 + 1175 m 4.25 11.75 - 16
- 30.8 b. a = 30.8 19.5 19.5 = 11.3
- 24 c. r = 24 - 121.2 =17
- 8.76 d. w = 876 535 5.35 W = 3.416.75 e. n = 6.75 - 3.45
- 3.45 n = 3.317.22
- f. m = 17.22 15.1715.17 m = 2.05
- q. 6.91 + x = 12.7612.76 x = 12.76 - 6.916.91 =5.85
- h. 15.38 + c = 25.5325.53 c = 25.53 - 15.3815.38 = 10.15
- 13. a. q = 90.96 76.85 14.11b. v = 150 53 - 123.25 27.28 c. h = 7.83 + 15.32 - 23.15d. 15.75 + m = 24.85m = 24.85 + 15.75 - 91
 - e. 19.36 + n = 39.23n = 39.23 - 19.36 = 19.87

- f 22 99 = 7 + 14.83z = 22 99 _ 14 83 = 8 16
- a. b. 24.13 = 31.47h = 31.47 + 24.13 = 55.6
- **14.** a. p = 10.24 8.23 = 2.01b. t = 0.26 + 2.45 = 2.71c. n = 524 - 245 = 279d. v = 100.01 - 42.89 = 57.12
 - e. $h = 1.23 \pm 6.82 \pm 8.05$ $f_{x} i = 3.01 \pm 12.40 = 15.41$
 - g. m = 9.21 7.53 = 1.68
 - h. y = 5.40 1.50 = 3.90

Form the place value chart by vourself.

- 15. $0.38 \pm x = 0.50$ The variable represents the needed weight of lettuce x = 0.50 - 0.38 = 0.12 kg
- 16. 5.74 + 6.50 + n = 15The variable represents how far he ran on Friday 11.74 + n = 15n = 15 - 11.74 = 3.26 km

Answers of multiple choice questions

- 2. C

- 5. C
- A

10. A

Exercise 9

1. a. $x = 34.750 \pm 19.051 = 53.801$ **b.** y = 121725 - 10.714 - 111.011

- c. a = 78 514 29125 49 389 d. m = 41.671 + 52.321 = 93.942
- 2. a. x = 0.023 b. x = 2.4

 - c. x 22
- d. x = 0.021
- 3. a. n = 3.418 = 2.342 = 1.074
 - b. x = 3.17 1.354 = 1.816
 - c. 146 + m = 5.476m = 5.476 - 1.46 - 4.016
 - d. w = 6150 + 4143 = 10293
 - e. p = 10.420 = 5.253 = 5.167
 - f. k = 2.145 = 0.773k = 0.773 + 2145 - 2918
 - **q.** c = 2.520 + 3.425 = 5.945
 - h. k = 25.130 23.024 = 2.106
 - i. z = 1.2 + 5.235 = 6.435
 - i. x 0.213 + 1.241 = 1.454
 - k. c = 3.41 1.782 = 1.628
 - L = 2.563 h = 1598b = 2.563 - 1.598 = 0.965
- 4. 3.45 + 3.25 + 4.75 + x = 16.7011.45 + x = 16.70x = 16.70 - 11.45 = 5.25 m
- 5. a. 35.235 + 42.012 = aa = 77.247 kgb. 36.85 + 75 = b
 - b = 44.35 LE
 - $c. h \pm 3.5 = 10$ $h = 10 - 3.5 = 6.5 \,\text{m}$

- d. 396 48 + a 497 64 a = 492 64 - 396 48 9616 km
- e. $0.78 \pm 0.58 = x$ $x = 1.36 \, \text{m}$
- E 78563 36156 = dd 42.407/liters
- a. 10.953 + c = 93.215c = 93.215 - 10.953 = 82.262
- h. 136 + 7 = 264z = 2.64 - 1.36 - 1.28 kg
- i. 1.5 + 2.451 + r = 4.5353.951 + r 4.535 r = 4.535 - 3.951 - 0.584 kg
- i. $3.5 \times 10 = b$ $b = 35 \,\mathrm{km}$
- $k.50 \pm m = 28.95 \pm 43.5$ 50 ± m = 72.45 m = 72.45 - 50 = 22.45 liters
- . Write your own story problem.
 - a. n = 9.05
 - **b.** v = 4.165
 - c. \times 12.5 2.75 = 9.75
 - d. m = 52.35
 - e. s = 34.750 15.25 = 19.5
 - f. d 56.125 3.853 = 52.272

Answers of multiple choice questions

- 2. €
 - 5. B
- 3. D 6. C
- В
 - 8. D
- 9. 0

D

Factors and Multiples



DOM: NO

1.

Factor pa	airs tree	Factor			T-cha 12
		1	2	1 2	12 A
		T/\	100/	3	A
123	4 6 12	123	4 6 12		

Factors of 12 are: 1, 2, 3, 4, 6, 12

h

r actor pairs tree	Factor rainbow n		T-chart
24	1 2 3 4 6 8 12 24	1 2 3 4	24 12 8 6

Factors of 24 are: 1, 2, 3, 4, 6, 8, 12 . 24



Factors of 19 are: 1, 19

- a. 1,2,7,14
 - b. 1,2,4,8,16
 - c. 1, 2, 4, 7, 14, 28
 - d. 1, 2, 4, 8, 16, 32
 - e. 1,3,5,15
 - f. 1, 2, 3, 6, 7, 14, 21, 42
- 3. a. 4
- b. 3
- c. 3

- d. 7
- e. 8
- £. 1

	Number	is 2 a factor ?		ls 5 a factor?		is 4 a factor?	
a.	40	(Ye5)	No	(Yes)	No	(Yes)	No
b.	12	(Yes)	No	Yes	No	(Yes)	No
C.	35	Yes	No	(Yes)	No	Yes	No
d.	17	Yes	No	Yes	(NO)	Yes	(No)

b. 2, 5, 10 5. a.5. c. 2 d 5. e.1,2,4,8 f. 1, 2, 4, 5, 10

- a. is a factor of
- b. is not a factor of
- c. is a factor of
- d. is a factor of
- e. is a factor of
- f. is a factor of
- g. is a factor of
- b. is a factor of
- 7. a. Prime
- b. Composite
- c. Prime
- d. Prime
- e. Prime
- f. Composite
- q. Prime
- h. Prime

- i. Prime
- j. Composite
- k. Composite L Prime
- a. 1,7, prime
 - b. 1,2,4,8,16, composite
 - c. 1,31, prime
 - d. 1,3,9,27, composite
 - e. 1,3,13,39, composite
 - f. 1,47, prime



 $30 = 2 \times 3 \times 5$

b.

 $48 = 2 \times 2 \times 2 \times 7 \times 3$

 $56 = 2 \times 2 \times 2 \times 7$

d.

 $36 = 2 \times 2 \times 3 \times 3$

10. a. $8 = 2 \times 2 \times 2$

- b. $15 = 3 \times 5$
- c. $21 = 3 \times 7$
- d. 32 = 2 × 2 × 2 × 2 × 2
- e. $36 2 \times 2 \times 3 \times 3$
- f. $42 = 2 \times 3 \times 7$
- $a.49 = 7 \times 7$
- h. $72 = 2 \times 2 \times 2 \times 3 \times 3$
- i. 80 2×2×2×2×5
- i. $90 = 2 \times 3 \times 3 \times 5$
- $k.99 = 3 \times 3 \times 11$
- $1.31 = 1 \times 31$
- 11. a. 2×2×2 8
 - Other factors are: 1,4,8
 - $h 2 \times 2 \times 5 = 20$
 - Other factors are: 1,4,10,20
 - $c.2 \times 3 \times 3 = 18$ Other factors are: 1,6,9,18
 - d. 2 × 5 × 5 50
 - Other factors are: 1,10,25,50
 - e. $2 \times 3 \times 7 = 42$
 - Other factors are: 1,6,14,21 ,42
 - $f. 2 \times 2 \times 2 \times 7 = 56$
 - Other factors are: 1,4,8,14, 28,56
 - g. 2×2×3×3-36
 - Other factors are: 1,4,6,9, 12 - 18 - 36
 - h. $3 \times 3 \times 7 = 63$
 - Other factors are: 1,9,21,63

- 12. a. 2 b. 1 itself
 - d. 11 e. 61 67 f. 2 7 g. 19 h. 2 3 5 i. 30 j. 72 k. 7 L. 1 m. 2
- 13. 1. A and C
 - 2. The distance could be divided into 4 km, 5 km, 11 km.
 [Answer may vary]
- 14. 1. 1 kilometer
 - 2. 4 kilometers or 8 kilometers
 - 3. Answer by yourself
- 15. 1. Basem is incorrect
 - 2. prime
 - 3. No s because 193 is a prime number whose factors are 1 and 193 only
 - 4. Neither bit has only one factor.

Answers of multiple choice questions

- 1. C 2. C 3. C 4. C 5. D 6. D 7. D 8. B 9. D 10. D 11. C 12. B
- **13.** C **14.** D **15.** B **16.** C **17.** C **18.** A

1

a. Factors of 4:1,2,4

- Factors of 6:1,2,3,6 Common factors:1,2 6CE:2
- b. Factors of 10:1,2,5,10
 Factors of 30:1,2,3,5,6,10,15,30
 Common factors:1,2,5,10
 GCF:10
- c. Factors of 40:1,2,4,5,8,10,20,40 Factors of 45:1,3,5,9,15,45 Common factors:1,5
- d. Factors of 54:1,2,3,6,9,18,27,54 Factors of 18:1,2,3,6,9,18 Common factors:1,2,3,6,9,18 GCF:18
- e. Factors of 48:1,2,3,4,6,8,12,
 16,24,48

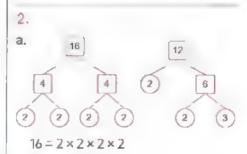
 Factors of 60:1,2,3,4,5,6,10,
 12,15,20,30,60

 Common factors:1,2,3,4,6,12

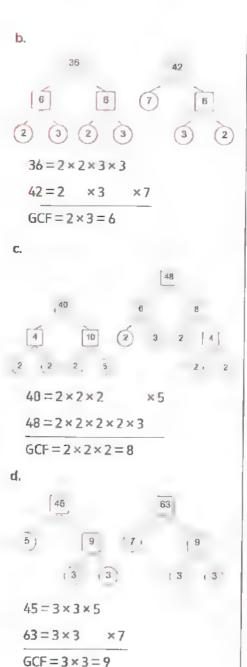
GCF: 12

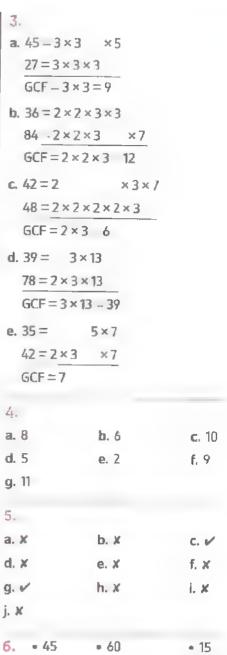
12 2 × 2

 $GCF = 2 \times 2 = 4$



 $\times 3$





27

- 7. 1. Factors of 42:1,2,3,6,7,14
 - 2.



2) 21

- 3 , n = 28
- 4. 1 , 2 , 7 , 14
- 5. 14
- 8. a.C b.A c.C
- 9.

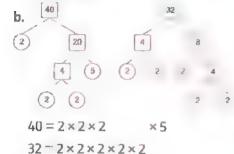
a.

21 14

 $21 \qquad 3 \times 7$ $14 = 2 \qquad \times 7$

GCF = 7

The greatest number of groups is 7 groups of 3 pencils and 2 erasers in each group



 $GCF = 2 \times 2 \times 2 - 8$

The greatest number of teams is 8 teams of 5 girls and 4 boys in each team

10.

Factors of 36:1,2,3,4,6,9,12,18

Factors of 24:1,2,3,4,6,8,12,24

Factors of 48:1,2,3,4,6,8,12,16, 24,48

Common factors: 1, 2, 3, 4, 6, 12

11. 24=2×2×2×3 40=2×2×2 ×5 56=2×2×2 ×7

 $GCF = 2 \times 2 \times 2 = 8$

Answers of multiple choice questions

- 1. C 2. D 3. D 4. B 5. D 6. A,B
- 7. B . E 8. D
- **9.** B

10. B

12

1.

- a. 0,3,6,9,12
- b. 0 , 5 , 10 , 15
- c. 0,6,12,18,24
- d. 0,7,14,21,28,35
- e. 0,9,18,27,36

- f. 0, 10, 20, 30, 40, 50, 60, 70
- g. 0,8,16,24,32,40,48,56
- h. 16,20,24,28,32,36
- i. 15, 20, 25, 30, 35, 40
- j. 0 , 2 , 4 , 6 , 8

2.

- a. No
- b. Yes
- **⊂** No

d. Yes

3.

- e. Yes
- f. Yes

- a, 4, 7, 4 b, 7, 6, 7
- c. 6,10,6
- **d.** $12 = 3 \times 4$
- e. 21 = 7 × 3
- f. 40 , 8
- g. 150 ₁₀

4.

- a. The multiples of 2 are:
 - 0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20

The multiples of 3 are:

0,3,6,9,12,15,18

The common multiples are:

- 0,6,12,18
- **b.** The multiples of 5 are:

0,5,10,15,20,25,30

The multiples of 4 are:

0,4,8,12,16,20,24,28

The common multiples are: 0,20

5.

The multiples of 5:0.5:10.15:20

The multiples of 2:0,2,4,6,8,10,12,14,16,18

Common multiples: 0,10

6.

The multiples of 8:0,8,16,24,32

The multiples of 4:0,4,8,12,16,20

The multiples of 6:0,6,12,18,24

Common multiples: 0

7.

The multiples of 3:0,3,6,9,12,15

,18 ,21 ,24 ,27 ,

30,33

The multiples of 4:0,4,8,12,16,20

,24,28,32,36,

40,44

Common multiples: 0,12,24

First twelve First twelve multiples of 3 multiples of 4

8.

a. 8

b. 20

c. 12,24

d. 9 , 18

(Answers may vary)

9.

a. 0,15,30,45 b. 0,6,12,18,24

c. 30,40,50,60,70

a. 1

b. 0

c. 12 , 24 (Answer may vary)

d. 4,7 [Answer may vary]

11.

a. 14,21,55

Tuice

b. 2 -4 -8

12.

Cartons	1	2	3	4	5	6
Eggs	12	24	36	48	60	72
Packs	1	2	3	4	5	6

27

36

45 54

Adel will buy 3 cartons of eggs and 4 packs of juice.

18

13.

- 3 : 00 a.m. 6 : 00 a.m. 9 : 00 a.m. 12 : 00 p.m.
- 6 : 00 a.m. 8 : 00 a.m. 10 : 00 a.m. 12 : 00 p.m.
- -6:00 a.m. >12:00 p.m.

9

14.

a. Multiples of 6: 0 , 6 , 12 , 18 , 24 , 30 , 36 , ...

Multiples of 9: 0, 9, 18, 27, 36, ...

Common multiples of 6 and 9:

18 - 36

LCM of 6 and 9 is:18

- **b.** Multiples of 3: 0 : 3 : 6 : 9 : 12 : 15 : 18 : 21 : 24 : ...
 - Multiples of 6: 0 : 6 : 12 : 18 : 24 :...

Common multiples:

6,12,18,24

ICM of 3 and 6 is: 6

c. Multiples of 10:0 -10 -20 -30 -40 -...

Multiples of 5: 0 • 5 • 10 • 15 • 20 • 25 • 30 • 35 • 40 • ...

Common multiples of 10 and 5:

10,20,30,40

LCM of 10 and 5 is: 10

d. Multiples of 7: 0 -7 -14 -21 -28 -35

Multiples of 14: 0,14,28,42,...

Common multiples of 7 and 14:

14,28,42

LCM of 7 and 14 is: 14

e. Multiples of 5: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Multiples of 11: 0 11 22 33 44 5

Common multiples of 5 and 11:55 LCM of 5 and 11 is:55

f. Multiples of 3:0,3,6,9,12,15,
18,21,24,27,...

Multiples of 8:0,8,16,24,32,...

Common multiples of 3 and 8:24

LCM of 3 and 8 is: 24

g. Multiples of 6: 0 , 6 , 12 , 18 , 24 , 30 , 36 , ...

Multiples of 10:0:10:20:30:40:50:...

Multiples of 15:0,15,30,45,60,

75 ,...

Common multiples of 6 -10 and 15:30

LCM of 6 10 and 15 is: 30

15.

a. 24 and 36

24=2×2×2×3 36=2×2 ×3×3

 $LCM 2 \times 2 \times 2 \times 3 \times 3 = 72$

b. 15 and 18

3 5

 $15 = 3 \times 5$ $18 = 2 \times 3 \times 3$

 $LCM = 2 \times 3 \times 3 \times 5 = 90$

c. 12 and 9

(1)

2 6

2 1 3 (3

 $12=2\times2\times3$ $9=3\times3$ $1CM=2\times2\times3\times3=36$

d. 32 and 48

[-]

140

4] 8

32

[8]

2 2 1 2 3 2 [

2) (2)

(2) (2)

32 2×2×2×2×2

 $48 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

LCM = 2 × 2 × 2 × 2 × 2 × 3 96

e. 6,9 and 8

(2)

[8]

2

3 3 2

6=2 ×3

9= 3×3

 $8-2\times2\times2$

 $LCM = 2 \times 2 \times 2 \times 3 \times 3 = 72$

f. 12 ₂ 9 and 18

12

10

2 6

(i) (i)

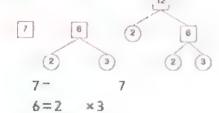
2 3 3 12=2×2×3

9 - 3×3

 $18 = 2 \times 3 \times 3$

 $\overline{LCM = 2 \times 2 \times 3 \times 3 = 36}$

g. 7 36 and 12



16.

a. LCM $= 3 \times 5 = 15$

 $12 = 2 \times 2 \times 3$

ICM = 2 x 2 x 3 x 7 84

- b. $8 = 2 \times 2 \times 2$ 12=2×2 ×3 $LCM - 2 \times 2 \times 2 \times 3 = 24$
- 6=2×3 14-2 x7 $LCM = 2 \times 3 \times 7 = 42$
- d. $16 = 2 \times 2 \times 2 \times 2$ 22 2 $\times 11$

 $LCM = 2 \times 2 \times 2 \times 2 \times 11 = 176$

- e. 10 = 2x5 12-2×2×3 15 =3×5 $LCM = 2 \times 2 \times 3 \times 5 = 60$
- f. $18 = 2 \times 3 \times 3$ $30 = 2 \times 3 \times 5$ $42 - 2 \times 3$ ×7 $LCM = 2 \times 3 \times 3 \times 5 \times 7$ 630

135 a. X h K c. X f. X d. X 1. 2 q. X h. X

18.

1.1/

- a. composite number
- b. factor
- d. The number one
- e. prime

c. multiples

f. product

19.

The other dates are: June 12, 18, 24 and 30

20.

- a. 60 centimeters
- b. 15 pieces of track

21.

Package	1	2	3	4	5	6
Kofta	3	6	9	12	15	18
Package	1	2	3	4	5	6
Aish Bald	12	24	36	48	60	72

4 packages of kofta and 1 package of aish haidi

22.

Lap	1	2	3	4	5	6
Hend	6	12	18	24	30	36
Lap	1	2	3	4	5	6
	-	16	24		4.0	4.0

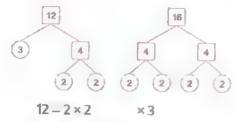
24 minutes.

Answers of multiple choice questions

3. R 5. C 6. R 9. n _ D 1... C 13. D 14. C

13

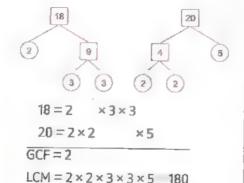
a. 12 and 16



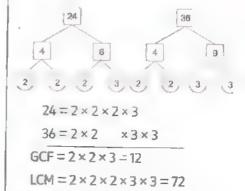
 $16 = 2 \times 2 \times 2 \times 2$ $GCF = 2 \times 2 = 4$

 $LCM = 2 \times 2 \times 2 \times 2 \times 3 = 48$

b. 18 and 20



c. 24 and 36



2.

- $12 = 2 \times 2 \times 3$ 10 = 2×5 GCF=2 $LCM = 2 \times 2 \times 3 \times 5 = 60$
- $9 = 3 \times 3$ 5= 5 GCE = LCM = 3 × 3 × 5 - 45
- c. $20 = 2 \times 2 \times 5$ $30=2 \times 3 \times 5$ GCF=2×5 10 $LCM = 2 \times 2 \times 3 \times 5 = 60$
- d. $28 = 2 \times 2 \times 7$ 42=2 ×3×7 $GCF = 2 \times 7 = 14$ $LCM = 2 \times 2 \times 3 \times 7 = 84$

e. 11 11

ICM = 11 x 2 = 22

f. $8=2\times2\times2$

$$4=2\times2$$

GCF - 2 × 2 - 4

 $LCM = 2 \times 2 \times 2 = 8$

g. $9 = 3 \times 3$ $12 = 2 \times 2 \times 3$

GCE 13

 $LCM = 2 \times 2 \times 3 \times 3 = 36$

h. $18 = 2 \times 3 \times 3$

30=2×3 ×5

 $45 = 3 \times 3 \times 5$

GCE = 3

 $LCM = 2 \times 3 \times 3 \times 5 = 90$

- 3.
- 45 • 60 • 15
- 4. GCF × LCM the product of the two numbers

 $2 \times 60 - 12 \times$ the other number $120 = 12 \times$ the other number

180

the other number = 10

5. I have to find the GCF

5×7

 $75 = 3 \times 5 \times 5$

GCF = 5

The strips should be 5 centimeters wide.

I have to find the LCM

12 7×7 ×3

8=7×7×2

 $LCM = 2 \times 2 \times 2 \times 3 = 24$

It will be 24 days.

7. I have to find the LCM.

 $8 = 2 \times 2 \times 2$

10 = 2

LCM = 2 × 2 × 2 × 5 = 40

She will have to buy 40 pencils.

x5

8. I have to find the GCF

6=2 ×3

 $12 = 2 \times 2 \times 3$

 $GCF = 2 \times 3 = 6$

The greatest number of bags is 6 bags.

9. I have to find the GCF

30 = 2

x3x5

48 = 2 × 2 × 2 × 2 × 3

 $GCF = 2 \times 3 = 6$

She will need 6 containers.

10. I have to find the LCM

 $9 = 3 \times 3$

7= 7

LCM - 3 × 3 × 7 - 63

She sold 63 figs and 63 pomegranates.

11. 4 - 2 x 7

6 2 ×3

LCM=2×2×3=12

Both plants will be watered after 12 days

12. $16 = 2 \times 2 \times 2 \times 2$

24=2×2×2 ×3

 $GCF = 2 \times 2 \times 2 = 8$

She can make 8 bouquets

13. The two numbers may be [12 and 9] or [36 and 3]

Unit 2 Assessment

- 1. a. B
- b. C

C.C

d. C

- e. B
- f. C
- 2. a. 7.136 3.816 a

b. 60

- c. 3.748 d. 1
- e. 23 29
- f. 24,28,32

- 3. a. \(\nu \) b. \(\times \) c. \(\times \) d. \(\nu \) e. \(\times \) f. \(\nu \)
- 4. a. → 4 b. → 2 d. → 3
- 5. $144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$ $24 = 2 \times 2 \times 2 \times 3 \times 3$ $6CE = 2 \times 2 \times 2 \times 3 \times 3 \times 24$

The number of students is 24 and each student will have 6 candy bars and 1 soda



1.352 + x = 2

É

x = 2 - 1.352 = 0.648

The mother will need 0.648 kg



Multiplication with Whole Numbers

» Concept 1: Models for Multiplication

» Concept 2: Multipluing 4-Digit Numbers bu 2-Digit Numbers



Concept

Models for Multiplication



b. 15

4			

4.000

40.000

40 400

150 1,500 15.000 150,000

c. 20 200 2.000

20.000 200,000

a. 30 c. 6,000 e. 200,000 g. 180

i. 13.000 k. 1,200

j. 700,000 1. 60,000

b. 600

d. 30,000

f. 50.000

h. 3.000

m. 1,500,000

n. 8,000,000

a. 1.000 c. 10 e. 1,000

b. 10,000 d. 100

g. 7

f. 100 h. 100,000

i. 100

a. 3×10

c. 7 × 1.000

e. 1 × 10

 $g. 2 \times 100,000$

j. 100,000 b. 8×100

d. 6×10.000 f. 13 × 1.000

h. 9 × 100,000

[Answers may vary]

a. 15 × 1,000	b. 9×10
c. 4 × 100,000	d. 7×100
e. 5 × 10,000	f. 1×1,000
g. 13 × 100	h. $18 \times 10,000$
(Answers may va	ry]

6. a. 5×10.000 **b.** 5×100 c. 5×1.000 $d.10 \times 5$ e. 100,000 × 5 a. 30×100

b. $30 \times 10,000$ $c.30 \times 1$ **d.** 30×1.000 e. 30×10 8. a. 70

b. 3.000 c. 8.000 d. 900 e. 5,000 f. 20.000 g. 700,000 h. 50.000

9.

a. Number of sandwiches $= 2 \times 100 = 200$ sandwiches

b. Number of kilograms $= 9 \times 1,000 = 9,000 \text{ kilograms}$

c. The number of chairs $= 4 \times 10$

=40 chairs.

d. Number of millimeters $=7 \times 10 = 70$ millimeters

e. Number of grams $= 5 \times 1,000 - 5,000$ grams

f. Number of milliliters in the bottle

 $-2 \times 1,000 = 2,000$ milliliters

- g. What Aya ran = 5 × 1,000 = 5,000 meters
- 10, a. \(\nu \) b. \(\times \) c. \(\nu \) d. \(\times \) e. \(\times \) f. \(\nu \) g. \(\times \) h. \(\nu \) i. \(\times \)

Powers of ten are different than multiples of ten because all powers of ten are multiples of ten but not all multiples of ten are powers of ten, for example;

- 30 is a multiple of ten but not a power of ten.
- 100 is both a power of ten and a multiple of ten.
- 42. Her answer is wrong the correct answer is: 90 × 1,000 = 90,000

Answers of multiple choice questions

- 1. C 2. C 3. B 4. D 5. B 6. C
- 7. A 8. D 9. C 10. C 11. B 12. C
- 10. C 11. B 12. C 13. C 14. C 15. B
- 16. C



1. a.

	30	8
10	300	80
6	180	48

- b. 50 4 20 1,000 80 3 150 12
- 100
 70
 5

 80
 8,000
 5,600
 400

 2
 200
 140
 10
- d. 300 60 1 50 15,000 3,000 50 6 1,800 360 6

2.

Ċ.

a. 20 1 60 1,200 60 4 80 4

 $21 \times 64 = 1,200 + 60 + 80 + 4 = 1,344$

- b. 100 3 70 7,000 210 2 200 6
 - $103 \times 72 = 7,000 + 210 + 200 + 6$ = 7.416
- c. 300 70 4 60 18,000 4,200 240 2 600 140 8

374 × 62 = 18,000 + 4,200 + 240 + 600 + 140 + 8 = 23,188 d. 500 6 40 20,000 240 2 1,000 12

 $506 \times 42 = 20,000 + 240 + 1,000 + 12$ = 21,252

- e. 1,000 100 40 20 20,000 2,000 800 7 7,000 700 280
 - 1,140 × 27 = 20,000 + 2,000 + 800 + 7,000 + 700 + 280 = 30,780

f.	2,000	700	20	1
50	100,000	35,000	1,000	50
6	12,000	4,200	120	6

2,721 × 56 = 100,000 + 35,000 + 1,000 + 50 + 12,000 + 4,200 + 120 + 6 = 152,376

3.

- 20 200 40 5 50 10
- $12 \times 25 = 200 + 40 + 50 + 10 = 300$
- b. 30 2 70 2,100 140 1 30 2

 $32 \times 71 - 2{,}100 + 140 + 30 + 2 = 2{,}272$

c. 400 80 3 7 2,800 560 21

 $7 \times 483 = 2,800 + 560 + 21 = 3,381$

d. 100 7 8 800 56

 $8 \times 107 = 800 + 56 - 856$

- e. 700 30 2 10 7,000 300 20 6 4,200 180 12
 - /32 × 16 = 7,000 + 300 + 20 + 4,200 + 180 + 12 = 11,712
- f. 400 60 20 8,000 1,200 1 400 60
 - 460 × 21 8,000 + 1,200 + 400 + 60 = 9,660
- g.
 500
 70
 2

 90
 45,000
 6,300
 180

 8
 4,000
 560
 16
- 572 × 98 = 45,000 + 6,300 + 180 + 4,000 + 560 + 16 = 56,056
- h. 200 1 30 6,000 30 2 400 2
 - 201 × 32 = 6,000 + 30 + 400 + 2 = 6,432

i,	600	50	9
40	24,000	2,000	360
2	1,200	100	18

$$659 \times 42 = 24,000 + 2,000 + 360$$

+ 1,200 + 100 + 18 = 27,678

j.	3,000	300	50	2
10	30,000	3,000	500	20
7	21,000	2,100	350	14

$$3,352 \times 17 = 30,000 + 3,000 + 500$$

 $+ 20 + 21,000 + 2,100$
 $+ 350 + 14 = 56,984$

a.
$$14 \times 27 = [10 + 4] \times [20 + 7]$$

= $[10 \times 20] + [10 \times 7]$
+ $[4 \times 20] + [4 \times 7]$
= $200 + 70 + 80 + 28 = 378$

b.
$$58 \times 42 = [40 + 2] \times (50 + 8)$$

= $[40 \times 50] + [40 \times 8]$
+ $[2 \times 50] + [2 \times 8]$
= $2,000 + 320 + 100 + 16$
= $2,436$

c.
$$19 \times 62 = [10 + 9] \times [60 + 2]$$

= $[10 \times 60] + [10 \times 2]$
+ $[9 \times 60] + [9 \times 2]$
= $600 + 20 + 540 + 18$
= 1,178

e.
$$(30 \times 40) + (30 \times 7) + (9 \times 40) + (9 \times 7)$$

= 1,200 + 210 + 360 + 63 1.833

f.
$$(20 \times 60) + (20 \times 3) + (9 \times 60) + (9 \times 3)$$

= 1,200 + 60 + 540 + 27 = 1,827

$$[50 \times 30] + [50 \times 4] + [7 \times 30] + [7 \times 4]$$

= 1,500 + 200 + 210 + 28 = 1,938

 $[40 \times 40] + [40 \times 8] + (9 \times 40] + [9 \times 8]$ = 1,600 + 320 + 360 + 72 = 2,352

	20	20	6
20	400	400	120
4	80	80	24

$$46 \times 24 = [20 + 20 + 6] \times [20 + 4]$$

$$= [20 \times 20] + [20 \times 4]$$

$$+ [20 \times 20] + [20 \times 4]$$

$$+ [6 \times 20] + [6 \times 4]$$

$$= 400 + 80 + 400 + 80$$

$$+ 120 + 24 = 1,104$$

a.	40	40	3
10	400	400	30
4	160	160	12

Mazen:
$$\{40 \times 10\} + \{40 \times 10\}$$

+ $\{40 \times 4\} + \{40 \times 4\}$
+ $\{3 \times 10\} + \{3 \times 4\}$
= $400 + 400 + 160 + 160$
+ $30 + 12 = 1,162$
80 3

560

21

7

Lamiaa: $[80 \times 7] + [80 \times 7] + [3 \times 7] + [3 \times 7]$ + $[3 \times 7]$					
=	= 560 + 56	0 + 21 + 21	1		
= 1,162					
	80 3				
10 800 30					
4 320 12					

Reeda:
$$[80 \times 10] + [80 \times 4] + [3 \times 10]$$

+ $[3 \times 4]$
= $800 + 320 + 30 + 12 - 1,162$

b.	30	3
20	600	60
6	180	18

$$[20 \times 30] + [20 \times 3] + [6 \times 30] + [6 \times 3]$$

= $600 + 60 + 180 + 18$
= 858

	20	10	3
20	400	200	60
6	120	60	18

$$(20 \times 20) + (20 \times 10) + (20 \times 3)$$

+ $(6 \times 20) + (6 \times 10) + (6 \times 3) = 400$
+ $200 + 60 + 120 + 60 + 18 = 858$

	11	11	11
10	110	110	110
10	110	110	110
6	66	66	66

$[10 \times 11] + [10 \times 11] + [10 \times 11]$
$+ [10 \times 11] + [10 \times 11] + [10 \times 11]$
$+ [6 \times 11] + [6 \times 11] + [6 \times 11]$
= 110 + 110 + 110 + 110 + 110 + 110
+ 66 + 66 + 66 = 858

C.	20	10	4
40	800	400	160
2	40	20	8

$$(40+2) \times (20+10+4)$$

 $-(40 \times 20) + (40 \times 10) + (40 \times 4)$
 $+(2 \times 20) + (2 \times 10) + (2 \times 4)$
 $= 800 + 400 + 160 + 40 + 20 + 8$
 $= 1,428$
[Ways may vary]

$$17 \times 32 = (10 + 7) \times (20 + 10 + 2)$$

$$= (10 \times 20) + (10 \times 10) + (10 \times 2)$$

$$+ (7 \times 20) + (7 \times 10) + (7 \times 2)$$

$$= 200 + 100 + 20 + 140 + 70 + 14$$

$$= 544$$

$42 \times 28 = [20 + 20 + 2] \times [20 + 8]$
$= (20 \times 20) + (20 \times 8) + (20 \times 20)$
$+[20 \times 8] + [2 \times 20] + [2 \times 8]$
=400 + 160 + 400 + 160 + 40 + 16
- 1,176

C.		30	30	2
	30	900	900	60
	6	180	180	12

$$36 \times 62 = [30 + 6] \times [30 + 30 + 2]$$

$$= [30 \times 30] + [30 \times 30] + [30 \times 2]$$

$$+ [6 \times 30] + [6 \times 30] + [6 \times 2]$$

$$= 900 + 900 + 60 + 180 + 180 + 12$$

$$- 2,232$$

d.	30	10	7
10	300	100	70
9	270	90	6 3

$$47 \times 19 = (30 + 10 + 7) \times (10 + 9)$$

$$= (30 \times 10) + (30 \times 9) + (10 \times 10)$$

$$+ (10 \times 9) + (7 \times 10) + (7 \times 9)$$

$$= 300 + 270 + 100 + 90 + 70 + 63$$

$$= 893$$

e.		50	40	9
	20	1,000	800	180
	20	1,000	800	180
	11	550	440	99

99 × 51 - (50 + 40 + 9) × (20 + 20 + 11)
$[50 \times 20] + [50 \times 20] + [50 \times 11]$
+ [40 × 20] + [40 × 20] + [40 × 11]
$+ (9 \times 20) + (9 \times 20) + (9 \times 11)$
1,000 + 1,000 + 550 + 800 + 800
+440 +180 +180 +99 5,049

F.	200	100	6
20	4,000	2,000	120
5	1,000	500	30

$$306 \times 25 = [200 + 100 + 6] \times [20 + 5]$$

$$= [200 \times 20] + [200 \times 5] + [100 \times 20]$$

$$+ [100 \times 5] + [6 \times 20] + [6 \times 5]$$

$$= 4,000 + 1,000 + 2,000 + 500 + 120$$

$$+ 30 = 7,650$$

g.	40	40	7
100	4,000	4,000	700
20	800	800	140
4	160	160	28

$$124 \times 87 = [100 + 20 + 4] \times [40 + 40 + 7]$$

$$= [100 \times 40] + [100 \times 40] + [100 \times 7]$$

$$+ [20 \times 40] + [20 \times 40] + [20 \times 7]$$

$$+ [4 \times 40] + [4 \times 40] + [4 \times 7]$$

$$= 4,000 + 4,000 + 700 + 800 + 800$$

$$+ 140 + 160 + 160 + 28 = 10,788$$

h.		100	100	10
	70	7,000	7,000	700
	9	900	900	90

210 × 79 [100 + 100 + 10] × [70 + 9]
$= [100 \times 70] + [100 \times 70] + [10 \times 70]$
$+(100 \times 9) + (100 \times 9) + (10 \times 9)$
= 7,000 + 7,000 + 700 + 900 + 900
+ 90 - 16,590

i.		100	10	7
	10	1,000	100	70
	10	1,000	100	70
	10	1,000	100	70

$$117 \times 30 = [100 + 10 + 7] \times [10 + 10 + 10]$$

$$= [100 \times 10] + [100 \times 10] + [100 \times 10]$$

$$+ [10 \times 10] + [10 \times 10] + [10 \times 10]$$

$$+ [7 \times 10] + [7 \times 10] + [7 \times 10]$$

$$= 1,000 + 1,000 + 1,000 + 100 + 100$$

$$+ 100 + 70 + 70 + 70 = 3,510$$

a.
$$7 \times 45 = 7 \times [40 + 5] = [7 \times 40] + [7 \times 5]$$

= $280 + 35 = 315$

b.
$$2 \times 98 = 2 \times (90 + 8) = (2 \times 90) + (2 \times 8)$$

= $180 + 16 = 196$

c.
$$13 \times 66 = [10 + 3] \times [60 + 6]$$

= $[10 \times 60] + [10 \times 6] + [3 \times 60]$
+ $[3 \times 6] = 600 + 60 + 180 + 18$
= 858

d.
$$37 \times 52 = [30 + 7] \times [50 + 2]$$

= $[30 \times 50] + [30 \times 2]$
+ $[7 \times 50] + [7 \times 2]$
= $1,500 + 60 + 350 + 14$

- e. $24 \times 107 = [20 + 4] \times [100 + 7]$ $[20 \times 100] + [20 \times 7]$
 - $+ [4 \times 100] + [4 \times 7]$
 - = 2,000 + 140 + 400 + 28
 - = 2,568
- f. $48 \times 215 = [40 + 8] \times [200 + 10 + 5]$
 - $= [40 \times 200] + [40 \times 10]$
 - $+[40 \times 5] + [8 \times 200]$
 - $+(8 \times 10) + (8 \times 5)$
 - 8.000 + 400 + 200
 - +1,600 + 80 + 40 10,320
- g. $53 \times 246 = [50 + 3] \times [200 + 40 + 6]$
 - $= (50 \times 200) + (50 \times 40)$
 - $+(50 \times 6) + (3 \times 200)$
 - $+[3 \times 40] + [3 \times 6]$
 - =10,000 + 2,000 + 300
 - ± 600 + 120 + 18 = 13,038
- h. $9 \times 3,123 = 9 \times [3,000 + 100 + 20 + 3]$
 - $= [9 \times 3,000] + [9 \times 100]$
 - $+ (9 + 20) + (9 \times 3)$
 - = 27,000 + 900 + 180 + 27
 - = 28,107
- i. $6 \times 2,031 = 6 \times [2,000 + 30 + 1]$
 - $= [6 \times 2,000] + [6 \times 30]$
 - + [6 × 1] 12,000 + 180 + 6
 - = 12,186

- j. 12 × 1,467
 - $= [10+2] \times [1,000+400+60+7]$
 - $= (10 \times 1,000) + (10 \times 400) + (10 \times 60)$
 - $+[10 \times 7] + [2 \times 1,000] + [2 \times 400]$
 - $+[2 \times 60] + [2 \times 7] = 10,000 + 4,000$
 - +600 +70 +2,000 +800 +120 +14
 - = 17,604
- k. 42 × 5.106
 - $= [40 + 2] \times [5,000 + 100 + 6]$
 - $= [40 \times 5,000] + [40 \times 100] + [40 \times 6]$
 - $+[2 \times 5,000] + [2 \times 100] + [2 \times 6]$
 - = 200,000 + 4,000 + 240 + 10,000
 - +200 + 12 = 214.452
- L. 73 × 6.874
 - $= [70 + 3] \times [6,000 + 800 + 70 + 4]$
 - $= [70 \times 6,000] + [70 \times 800] + [70 \times 70]$
 - $+[70 \times 4] + [3 \times 6,000] + [3 \times 800]$
 - $+[3 \times 70] + [3 \times 4]$
 - =420,000 + 56,000 + 4,900 + 280
 - +18,000 + 2,400 + 210 + 12
 - -501,802
- 10. What Ali would walk
 - $=6 \times 187 = 6 \times [100 + 80 + 7]$
 - $= [6 \times 100] + [6 \times 80] + [6 \times 7]$
 - -600 + 480 + 42
 - = 1,122 kilometers
- 11. What Ali would drive
 - 60 × 187 11,220 kilometers

- 12. The number of hours
 - $^{-}14 \times 52 = [10 + 4] \times [50 + 2]$
 - $= [10 \times 50] + [10 \times 2] + [4 \times 50]$
 - $+[4 \times 2] = 500 + 20 + 200 + 8$
 - = 728 hours
- 13. What Sara paid
 - $= 36 \times 125 = [30 + 6] \times [100 + 20 + 5]$
 - $= [30 \times 100] + [30 \times 20] + [30 \times 5]$
 - $+[6 \times 100] + [6 \times 20] + [6 \times 5]$
 - -3,000 + 600 + 150 + 600 + 120
 - +30 = 4,500 L.E.
- 14. What Eslam paid
 - $= 387 \times 46$
 - $= [300 + 80 + 7] \times [40 + 6]$
 - $= [300 \times 40] + [300 \times 6] + [80 \times 40]$
 - $+[80 \times 6] + [7 \times 40] + [7 \times 6]$
 - =12,000 + 1,800 + 3,200 + 480
 - +280 + 42 = 17,802 L.E.
- 15.
- a. 🗸
- b. x

- d. X
- e. 🗸

- 16.
- a. 40 ,5
- **b**. 20 ₅30
- c. 74

C. V

f. X

- d. 1,000,900,5,1,000,900,5
- e. 478,5,5,5
- f. 7,7,7

17.

3.

- Badir correctly wrote 45 in expanded form in the area model and correctly wrote 200 His multiplication and addition in the model were also correct.
- 2. Badir did not write 206 in expanded form in the model. He did not leave the number in the tens place as a zero. Instead the moved the 6 to the tens place making the number 60 instead of 6
 - 8,000
- 200 0 6 + 1,000 40 8,000 0 240 + 240 5 1,000 0 30 + 30
- 18.

	50	~
10	300	20
5	150	10

30

- 5

The number of entrances $= 15 \times 32 \approx 480$ entrances

- 19. The number of passengers
 - \sim 12 × 25 = 300 passengers

Answers of multiple choice questions

- 1. D
- 2.
- 3. B

- 4. C
- 5. B
- 6. B

- 7. A
- 8. C

7	-
3 (1) ()	16
2	

a. 76

x 32

2,100 [30 × 70]

+ 180 [30 × 6]

+ 140 [2 × 70]

+ 12 [2 × 6]

b. 97

× 68

5,400 [60 × 90]

+ 420 [60 × 7]

+ 720 [8 × 90]

+ 56 [8 × 7]

x 54

1,998

d.

e. 64

× 21

4 (4×1)

+ 60 (1×60)

+ 80 [20×4]

+ 1,200 [20×60]

f. 241

x 56

6 [6 × 1]

+ 240 [6 × 40]

+ 1,200 [6 × 200]

+ 50 [50 × 1]

+ 2,000 [50 × 40]

+ 10,000 [50 × 200]

g.

h. 2,304

x 27

28

+ 0

+ 2,100

+ 14,000

+ 80

+ 0

+ 6,000

+ 40,000

62,208

i.		4,790
	×	63
		0
	+	270
	+	2,100
	+	12,000
	4-	0
	+	5,400
	ł	42,000
	+	240,000
		301,770

2.
a. x b. √ c. √
d. x e. √ f. x

a. —→2 b. →3
c. —→1 d. —→4

a. Estimate: 70 × 30 – 2,100

× 31

2
+ 70
+ 60
+ 2,100

2,232

b. Estimate: $500 \times 20 = 10.000$

	527	
×	23	
	21	
+	60	
4	1,500	
+	140	
+	400	
+	10,000	
	12,121	

	169	
×	71	
	9	
+	60	
+	100	
+	630	
+	4,200	
+	7,000	
	11,999	

8,461		
25	×	
5		
300	+	
2,000	+	
40,000	+	
20	+	
1,200	+	
8,000	+	
160,000	+	
211,525		

e. Estimate: $7,000 \times 40 = 280,000$

	7,012
×	43
	6
+	30
+	0
+	21,000
+	80
+	400
+	0
+	280,000
	301,516

×	9 ,120	
×	92	
	0	
+	40	
+	200	
+	18,000	
+	0	
+	1,800	
+	9,000	
+	810,000	
	839,040	
	+ + + + +	+ 40 + 200 + 18,000 + 0 + 1,800 + 9,000 + 810,000

5.

167		
21	×	
7		
60	+	
100	+	
140	+	
1,200	+	
2,000	+	
3,507		

	135
×	18
	40
+	240
+	800
+	50
+	300
+	1,000
	2,430

The number of guests is 2,430 quests

	_	
7.		117
	×	27
		49
	+	70
	+	700
	+	140
	+	200
	+	2,000
		3,159

What Ahmed paid = 3,159 L.E.

a. The day in Mercury - 59 x 24 = 1,416 hours

The day on Venus = 243 × 24

= 5,832 hours

b. The day on Plute = 1,440 × 6 = 8,640 minutes

Answers of multiple choice questions

- 7. B

Multiplying 4-Digit Numbers by 2-Digit Numbers



CHINNEL

1.

a.		20	6
	30	D. 600	C. 180
	3	B. 60	A.18

Final product:

$$18 + 60 + 180 + 600 = 858$$

b.		70	8
	50	D. 3,500	C. 400
	2	B. 140	A. 16

Final product:

C,		300	60	7
	20	F. 6,000	E.1,200	D. 140
	9	C. 2,700	B . 540	A. 63

Final product:

d.		500	40	6
	10	F. 5,000	E. 400	D. 60
	8	C. 4,000	B. 320	A. 48

Final product:

a.
$$3 \times 6 = 18$$

 $3 \times 20 = 60$
 $30 \times 6 = 180$
 $30 \times 20 = 600$
Final product:
 $18 + 60 + 180 + 600 = 858$

c.
$$9 \times 7 = 63$$

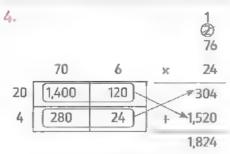
 $9 \times 60 = 540$
 $9 \times 300 = 2,700$
 $20 \times 7 = 140$

$$20 \times 60 = 1,200$$

 $20 \times 300 = 6,000$

3. a.		① ④ 26	b.		4 78
	×	33		×	52
		78			156
	+	780		+	3,900
		858			4,056

3
3



The bottom row of the area model matches the first part of the addition step.

The top row of the area model matches the second part of the addition step.

(4) 4 6	c.		① ②① 563
18		ж	2 4
,368			2252
460		+	11260
828			13512

б.	a. 938	b . 17,016
	c. 20,442	d. 6,232
	e. 1,926	f. 12,402
	g. 55,488	h. 13,325
	i, 406,080	j. 460 887
	k. 603,190	I. 197,142
	m. 269,568	n. 268,328
	o. 661,892	
7	(1) (1)	=
	ĐĐ_	Estimate
а,	888	900

	25,752		
	①	Esti	nate
b.	7 2 1		700
×	7 4	×	70
	2,884	4	9,000

2 9

7.992

17.760

	2,884	49,000
+	50,470	
	53,354	

30

27,000

700

70

- a. $400 \times 70 = 28,000$
- b. 900 × 30 = 27,000
- c. $600 \times 70 = 42,000$
- d. $500 \times 70 = 35,000$
- e. $800 \times 30 = 24.000$
- f. 1,000 × 90 90,000

9.

- a, x b. x
- d, ✓ e. X f. ✓

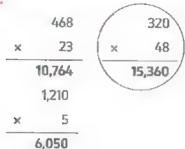
10.

l agree + because :

 $34 \times 69 = 2,346$

 $[34 \times 70] - 34 = 2,380 - 34 - 2,346$

11.



2,263 954 × 7 × 18 15,841 17,172 589 × 26 15,314

13.

1. 3,567 × 24

My Estimate: 4,000 × 20 80,000 Evaluate: 3,567 × 24 85,608 Matching model letter: A

2. 2,521 × 74

My Estimate: 3,000 × 70 = 210,000 Solve: 2,521 × 74 = 186,554 Matching model letter: F

3. 8,222 × 53

C. 1/

My Estimate: 8,000 × 50 = 400,000 Evaluate: 8,222 × 53 = 435,766 Matching model letter: D

4. 6,209 × 33

My Estimate: 6,000 × 30 = 180,000 Evaluate: 6,209 × 33 = 204,897 Matching model letter: C

Answers of multiple choice questions

- 1. C
- 2.
- 3. A

- 4. D
- 5. C 8. A
- 6. A

7. D

Exercise 18

1

- a. What the family will pay $= 3 \times 24 = 72$ pounds
- b. What the family will pay $2 \times 3 = 6$ pounds
- c. What the family will pay $= 3 \times 8 = 24$ pounds
- d. What the family will pay in total = 72 + 6 + 24 = 102 pounds

2

- a. What they will pay $= 12 \times 185 = 2,220$ pounds
- **b.** What they will pay $13 \times 2/0 = 3,150$ pounds
- c. Their bill 2,220 + 3,150 = 5,370 pounds

3.

What she used in February

402 × 83 = 33,366 grams

What she used in March

= 753 × 83 = 62,499 grams

What she used in February and March

= 33,366 + 62,499 = 95,865 grams

4

What he will need for 1 recipe $= 3 \times 170 = 510$ grams What he will need for 18 recipes $= 18 \times 510 = 9{,}180$ grams

5.

What the factory produces in the first $8 \text{ hours} = 55 \times 8 \quad 440 \text{ pairs}$ The rest $= 500 \cdot 440 - 60 \text{ pairs}$ What the factory will produce in 30 days $= 500 \times 30 = 15,000 \text{ pairs}$

6.

What Logy saved 12 × 123
- 1,4/6 pounds

What Mariam saved – 15 × 123
- 1,845 pounds

What they saved 123 + 1,476 + 1,845

3,444 pounds

7.

What he will need for 1 batch = 250 + 15 + 30 = 295 mL What he will need for 18 batches = $18 \times 295 = 5,310$ mL

8.

What she uses of sesame seeds each week = $140 \times 20 = 2,800$ grams
What she makes of tahini in a week = $120 \times 20 = 2,400$ milliliters
What she makes of tahini in 36 weeks = $2,400 \times 36 = 86,400$ milliliters = 86.4 L

9

What the first factory produces in a year = $6,580 \times 12 - 78,960$ toys

What the second factory produces in a year = 7,375 × 12 = 88,500 toys The difference = 88,500 = 78,960 = 9,540 toys

10.

The number of lemons a day = $6 \times 8 = 48$ lemons The number of lemons in 365 days = $48 \times 365 = 17,520$ lemons The number of liters = 8×365 = 2.920 L

The weight of sugar in a week = $1,133 \times 7 = 7,931$ grams The weight of sugar in 30 weeks = $7,931 \times 30 = 237,930$ grams

Ipilital Ascessment

1.	a. X	b. 🗸	c. X
	d. X	e. 🗸	f. 🗸
2.	a. C	b. C	c. A
	d. A	e.B	f. C
3.	а,	7,585 b. 70	0
	×	73	
		22,755	
	+	530.950	

553,705

d.

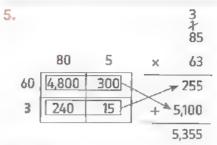
/00 60 3

90 63,000 5,400 270

4 2,800 240 12

e. 100 f. 31,545

4. a. — 3 b. — 4
c. — 1 d. — 2



6. What he will need for 1 recipe
 = 240 + 14 + 25 = 279 mL
 What he will need for 20 batches
 = 279 × 20 = 5,580 mL

Answers of unit

4

Division with Whole Numbers

» Concept 1: Models for Division

» Concept 2: Dividing by 2-Digit Divisors



c. 3,900

Models for Division

19

- 1. a. 20,5,4,0 b. 36,4,9,0 c. 50,10,5,0 d. 75,5,15,0 e. 68,7,9,5 f. 28,5,5,3
- 2. a. v b. x c. v d. v e. v
- a. $14 \div 7 = 2$ b. $20 \div 4 = 5$ c. $35 \div 5 = 7$ d. $28 \div 7 = 4$ e. $35 \div 7 = 5$ f. $20 \div 5 = 4$

Equations may vary

- g. $100 \div 5 = 20$ h. $14 \div 2 = 7$
- 4. a. 7 b. 7 c. 10 d. 6 e. 12 f. 3

5.

- a. The number of plums in each bag $= 18 \div 3 = 6$ plums
- b. The number of bags $-18 \div 3 = 6$ bags
- c. The cost of the blue hat $= 400 \div 4 = 100 \text{ L.E.}$
- d. The number of times = $400 \div 100$ = 4 times
- e. The number of students in each group = 35 ÷ 5 ~ 7 students
- f. The number of boxes = $18 \div 3$ = 6 boxes

- g. The number of weeks 56 ÷ / = 8 weeks
- Model A is the best model to represent the number of people in each room.
- 7. 10

Answersofmultiple choice questions

1. C 2. B 3. D 4. B 5. C 6. B 7. A 8. C 9. B

Exercise

20

a. $3 \times 5 = 15$ $3 \times 50 = 150$

1.

- 3 × 500 = 1,500
- **b.** $6 \div 3 = 2$ $60 \div 3 = 20$
 - $600 \div 3 = 200$
 - $6,000 \div 3 = 2,000$
- c. 40 × 2 = 80
 - $40 \times 20 = 800$
 - 400 × 200 80,000
- d. $4 \times 10 = 40$
 - $4 \times 100 = 400$
 - 4 × 1,000 = 4,000

- e. $18 \div 6 = 3$ $180 \div 6 = 30$ $1.800 \div 6 = 300$
- f. 12 × 3 = 36 12 × 30 = 360 12 × 300 = 3,600
- g. 15 × 2 = 30 15 × 20 = 300 15 × 200 = 3,000
- h. $35 \div 7 = 5$ $350 \div 7 = 50$ $3,500 \div 7 = 500$
- i. $8 \times 2 16$ $8 \times 20 = 160$ $8 \times 200 = 1,600$
- 2. a. 300 10 5 7 2,207 107 37 7 -2,100 -70 -35 107 37 2
- 2,207 ÷ 7 = 300 + 10 + 5 = 315 R 2 b. 200 50 4 2,794 594 44 11 -2,200 -550 -44 594 44 00
- $2,794 \div 11 = 200 + 50 + 4 = 254$
- 100
 20
 5

 1,625
 325
 65

 -1,300
 -260
 -65

 325
 65
 00
- $1,625 \div 13 = 100 + 20 \div 5 = 125$

d. 600 50 8 7,896 696 96 12 7,200 -600 -96 696 96 00

 $7,896 \div 12 = 600 + 50 + 8 = 658$

40 5 1,035 115 23 920 -115 115 000

 $1,035 \div 23 = 40 + 5 = 45$

e

- f. 50 5 10 3 1,428 378 63 168 -1.050-210- 105 -63 00 378 168 63
- $1,428 \div 21 = 50 + 10 + 5 + 3 68$
- 9. 90 5 3 4,410 360 135 -4,050 -225 -135 360 135 000

 $4,410 \div 45 = 90 + 5 + 3 = 98$

h. 300 50 10 5 979 229 5.479 79 15 -4.500-750-150 -75229 79 979 04

 $5,479 : 15 \quad (300 + 50 + 10 + 5) R 4$ = 365 R 4

$$100 + 10 + 2 + 2 = 114$$

$$100 + 50 = 150$$

$$50 + 10 + 1 = 61$$

5.
$$5,382 \div 52 = 103 R 26$$

 100 2 1
 $5,382$ 182 78
 $-5,200$ 182 -52
 182 -52
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4.	a. 🗸	b. x	C. 💅	d. X
	e. 🗸	f. of	g. 🗸	h. x

- The student used the remainder as the quotient
- 6. B

Answers of multiple choice questions

	2.	3.	_	
-31	5.	 0.	В	

118 R 1	3			817	
a. 23)2,727		b.	Page 1	2,451	
-2,300	100		- [<u>2,400</u>	800
427				51	
- 230	10		-	30	_10_
197				21	
- 69	3		_	21	7
128				0	
- 69	3				
59					

- 46 <u>2</u>		
134 R 23 c. 60/8,063	d.	9) 4,608
- <u>[6,000]</u> <u>100</u> 2,063 - <u>[1,800]</u> <u>130</u>		- 4,500 <u>500</u> 108 - 90 10
263 - 240 4 23		<u>- 18</u> [2

e. 412 15) 6,180	f. 232 R 15 30 6,975
-4,500 <u>,300</u>	-6.000 200
1,680	975
<u>-1,500 [100</u>	<u>- 900</u> <u> 30</u>
– 150 10	- 60 2_
30	15]
_ 30 2	
0	

135

420

- 360 30

- 1,200 | 100

12) 1,620

d.	6,305 ÷ 13		485	
	=400+50+30+5	13)	5,305	
	= 485	į	5,200	400
	- 403		1,105	
			650	50
			455	
		_	390	[30]
			65	
		_	65	5
			0	

e. 7,875 ÷ 32	246 R 3
200 + 40 + 6	32 7,875
≃ 246 R 3	<u> </u>
- 240 K 3	1,475
	 1,280 40
	195
	<u> </u>
	3
f 7 770 ± 75	80 D /

f.
$$2,229 \div 25$$

 $-50 + 30 + 9$
 $= 89 R 4$
 $25)2,229$
 $-1,250$
 $9/9$
 $-\frac{750}{229}$
 $-\frac{30}{229}$
 $-\frac{225}{4}$
 9

g. 4,625 ÷ 35	132 R 5
=100+30+2	35) 4,625
	_ 3,500 <u>[100</u>
- 132 R 5	1,125
	- 1,050 30
	75
	– 70 <u>2</u>

Dividing by 2-Digit Divisors

h. 1,875 ÷ 24 = 50 + 20 + 5 + 3 = 78 R 3	78 R 3 24) 1,875 -1,200 50 675 - 480 20
	195
	- 120 5
	75
	<u>- /2</u> 3_

a. X b. X c. \(\si \) d. \(\si \) e. X f. \(\si \)

a.
$$5,814 \longrightarrow 6,000 \text{ and } 47 \longrightarrow 50$$

 $6.000 \div 50 = 120$

$$5.814 \div 47 = 100 + 20 + 3 = 123 R 33$$

$$6,397 \div 28 = 200 + 20 + 8 = 228 R 13$$

c.
$$1,448 \longrightarrow 1,000 \text{ and } 48 \longrightarrow 50$$

 $1,000 \div 50 = 20$
 20
 $1,000 \div 50 = 20$
 20
 $1,448 \longrightarrow 1,000 \text{ and } 48 \longrightarrow 50$
 20
 $1,448 \longrightarrow 1,000 \text{ and } 48 \longrightarrow 1,000 \text{$

$$1,448 \div 48 = 20 + 10 = 30 R 8$$

d. 7,061
$$\Rightarrow$$
 7,000 and 23 \Longrightarrow 20 7,000 \div 20 = 350

	300	5	2
	7,061	161	46
23	6,900	_115	_46
	161	46	0

$$7,061 \div 23 = 300 + 5 \div 2 = 307$$

$$6.658 \div 69 = 90 + 6 = 96 R 34$$

$$\begin{array}{r}
 56 \\
 19 \overline{\smash)1,064} \\
 \underline{-950} \ | 50 \\
 114 \\
 -114 \ | 6 \\
 0 \\
 \end{array}$$

$$\begin{array}{r}
 1,064 \div 19 = 50 \div 6 = 56 \\
 \end{array}$$

1. 6 a. 32) 192	b. 22)756
– 192	- 66
0	96
	- 88
	8
192 : 32 - 6	756:22-34R8

29

172 32 0	1 /30 · ZZ 34
0032 c. 43 1,376	d. 65) 543
-129	-520
86	023
- 86	
0	

$$8,014 \div 46 = 174 R 10$$

	0278	0118	$5,314 \div 15 - 354$
g.	18) 5,009	h. 81) 9,567	0101
	- 36	-81	o. 18) 1,818
	140 ·	146	- 18
	– 126	81	018
	149	657	
	- 144	- 648	_ 18
	5	9	0
5,0	009 ÷ 18 – 278 R 5	9,567 ÷ 81 = 118 R 9	1,818 ÷ 18 = 101

0563	0041
11) 6,203	j. 48) 1,974
55	-192
70	54
- 66	34
43	- 48
- 33	6
10	1,974: 48 - 41 R 6

i.

025 k. 29 725	0092 L 57/5,262
58	- 513
145	132
145	- 114
0	18

$$725 \div 29 = 25$$
 $5,262 \div 57 = 92 R 18$

	0354	0101
m.	15) 5,314	n. 15) 1,515
	45	– 1 5
	81	015
	75_	
	64	- 15
	- 60	0
	4	1,515 ÷ 15 = 101

- 2. 0093 a. 12/1,116 -108 36
 - 36 - 36 0
- 1,116: 12 = 93
- $12 \times 93 = 1,116$
- 0354 b. 13/4,609 -39 -65 -59 - 52
 - 4,609 ÷ 13 = 354 R7
 - $13 \times 354 + 7 = 4,609$
- 0147 c. 25)3,6/5 -25 117 -100 175 -1/5
 - $3,675 \div 25 = 147$
 - 25 × 147 3,675

- 0125 d. 34)4,251 -34 85 -68 171 - 170
 - 4,251 ÷ 34 125 R 1
 - $34 \times 125 + 1 = 4,251$
- e. 36)9,036 -72 -180 -36 -36 0 $9,036 \div 36 = 251$
- 36 × 251 ~ 9,036

- 0391
 g. 25 9,778

 75
 227

 225
 28

 25
 3
 - $9,778 \div 25 = 391 R 3$
 - 25 × 391 ± 3 = 9,778
- 0258 h. 11/2,838 -22 63 -55 88 - 88
 - $2,838 \div 11 = 258$
 - $11 \times 258 = 2,838$
- 0101 i. 19) 1,919 - 19 - 19
 - $1,919 \div 19 = 101$
 - 19 × 101 = 1,919
- 3. a. x b. v c. v
- d. 🗸 e. 🗴
- 4. a. < b, = c. < d. > e. < f. =

5. 029 a. 12) 350 - 24 110 - 108

Rana can sell 29 bags and 2 cookies are left over

check:

	20	9
	350	110
12	<u>- 240</u>	_108
	110	2

- $350 \div 12 = 20 + 9 = 29 R 2$
- Rana can use any factor of 350 as the number of cookies in each bag and she has none left over as 5 or 10 (Answers may vary)
- 6. Ziad is correct 006
 Because 100: 16 6 R 4 16 100

 -96
- 7. 5,520

Answers of multiple choice questions

- 1. C
- 2. D
- 3. B

- 4.. A
- 5. D
- 6. D

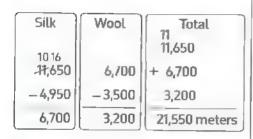
7. C

He need 12 travs

The remaining balah et sham

= 12 2 10	2RZ
	4)10
$10 \div 4 = 2 R 2$	-8
About and the least control of	
then each child will get	2
2 balah el sham and the	
remainder will be 2 balah e	el sham,

3.



Mighty Steel:

100,000	100,000	100,000
5 tons	5 tons	5 tons

Silver Strong Steel:

70,000	70,000	70,000	70,000	70 000
3 tons	3 tons	3 tons	3 tons	3 tons

The price of Mighty Steel

= 100,000 × 3 300,000 LE.

The price of Silver Strong Steel

 $-70.000 \times 5 = 350,000$ L.E.

The architect will save

=350,000 - 300,000 50,000 L.E.

5. Office Supply Paper Palace Central 762 2.286 3 143 2,286 2.143

Total 000 162 + 2.28 6 + 2.1 4 3 5,191 reams

6. Zeinab = $12 \times 18 = 216$ squares Reem = $13 \times 13 = 169$ squares Difference - 216 - 169 = 47 squares

Number of all sold T-shirts $= 30 \times 25 = 750 \text{ T-shirts}$ Total earned from all T shirts $=750 \times 3 - 2.250 LE$ Money earned from basketball I shirts = 2.250 - 1.134 = 1.116 L.E.

What they traveled = 124 + 210 $-334 \, \text{km}$ What will they need to travel on Sunday $= 465 - 334 = 131 \,\mathrm{km}$

Number of goats and cows = 574 + 346 = 920 animals Number of horses = 1,354 - 920 - 434 horses Number of left horses = 434 - 89= 345 horses

10. Number of all eggs = 238 + 122 = 360 eggs Number of unbroken eggs = 360 28 - 332 eggs Number of white eggs = 332 - 126 = 206 eggs

11. (1) Number of standard rooms $= 35 \times 6 = 210 \text{ rooms}$

[2] Number of suites in each floor $=18 \div 6 = 3$ suites

12. (1) The longest time = 23 × 7 = 46 minutes

> [2] Number of right questions = 23 - 9 = 14 questions Score of Nada = 14×4 = 56 points

13. Price of laptop after discount = 2.099 - 200 = 1.899 pounds Price of the jacket after discount = 136 - 15 = 121 pounds What he needs to pay = 1.899 + 22 + 121 = 2.042 pounds

Unité Assessment

1.

a. B

b. B c.C d.B e. C f. D a. 261 b. 35 c. dividend d. 3.561 e. 0 f. 324 a. X C. X d. 🗸 e. X f. X

b. +3

$$6,203 \div 11 = 500 + 60 + 3$$

= 563 R 10

Number of ducks leaving the nest
= 126 + 46 172 ducks

Number of ducks left
= 578 - 172 = 406 ducks.

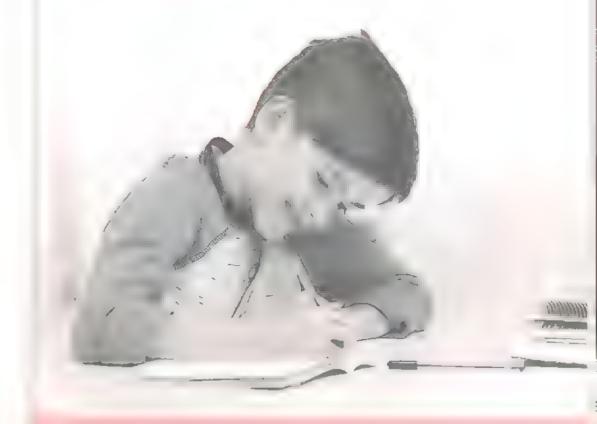
= 174 R 11

Answers of unit

Multiplication and Division with Decimals

» Concept 1: Multiplying Decimals

» Concept 2 : Dividing Decimals





Grammili

24

c. 32.9

f. 36

i. 341

L 0.074

o. 6.021

1.

a.	64.3
d.	1265

m. 4.215 n, 2.671

p. 0.0425

2.

×	3	30	300
0.001	a. 0.003	g. 0.03	m. 0.3
0.01	b. 0.03	h. 0.3	n. 3
0.1	c. 0.3	i. 3	o. 30
1	d. 3	j. 30	p. 300
10	e. 30	k. 300	q. 3,000
100	f. 300	L 3,000	r. 30,000

a. 7.5

b. 1.75

c. 26.4

d. 4.55

a. $14.96 \times 1000 = 14,960$

 $14.96 \times 100 = 1,496$

 $14.96 \times 10 = 149.6$

 $14.96 \times 1 = 14.96$

 $14.96 \times 0.1 - 1.496$

14.96 × 0.01 ~ 0 1496

 $14.96 \times 0.001 = 0.01496$

b. $25 \times 1000 = 25,000$

25 × 100 2,500

 $25 \times 10 = 250$

 $25 \times 1 = 25$

 $25 \times 0.1 = 2.5$

 $25 \times 0.01 = 0.25$

 $25 \times 0.001 = 0.025$

c. $57 \times 1000 = 5.700$

 $5.7 \times 100 = 570$

 $5.7 \times 10 = 57$

 $57 \times 1 = 5.7$

 $5.7 \times 0.1 = 0.57$

 $5.7 \times 0.01 = 0.057$

 $5.7 \times 0.001 = 0.0057$

a. $0.3 \times 3 = 0.9$



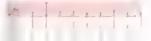
b. $0.3 \times 4 = 1.2$

- 1	+ +	4 / 2 /	+	4	- 1
Ġ		1 1.2	Ż		3

c. $03 \times 5 = 1.5$



a. $0.1 \times 0.1 = 0.01$



b. $0.3 \times 0.4 = 0.12$



c. $0.5 \times 0.2 = 0.10$



d. $0.9 \times 0.5 = 0.45$



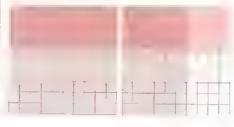
e. $0.6 \times 0.3 = 0.18$



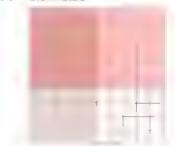
g. $0.7 \times 0.8 = 0.56$



h. $1.6 \times 0.4 = 0.64$



i. $0.5 \times 0.6 = 0.30$





- a. $A = 100 \cdot B = 10$
- b. $C = 1.000 \cdot D = 100 \cdot E = 10$
- c. F = 10.000 , G = 100
- d. H = 10.000 s = 1.000 s = 100 s = 10
- e. L = 8.032.000
- f. M = 10, N = 0.1, O = 0.01
- a. P = 0.001
- h. $Q = 100 \cdot R = 0.01$

- a. =
- b. =
- f. > e. =

c. >

c. 0.1

f. 0.001

1. 2.94

L 621

c. 228.2

f. 2.282

- d. > g. <
- h. <

9.

- b. 1,000 a. 10 d. 100
 - e. 1.000
- g. 100 h. 1,000
- 1. 0.255 k. 748.2
- m. 8,779

10.

- a. 22.82
 - b. 0.2282 e. 1924
- d. 192.4
- g. 0.1924 h. 192.4
- i. 0.02282

- 11.
- What Hoda will walk = 0.72×1.000 =720 meters

Answers of multiple choice questions

2. B 1. B

7. D

- _ D 5. D
 - 8. C
- 10. R 11. R
- 12. C

3. B

6. C

9. R

14. C 13. C

Exercise 25

- [Estimation may vary]
- a. $24 \times 2 = 48$ [to the nearest Ones]
- b. $25 \times 4 = 100$ (to the nearest Ones)
- c. $8 \times 12 = 96$ [to the nearest Ones]
- d. 7 × 12 ~ 84 (to the nearest Ones)
- e. $4.1 \times 5.2 = 21.32$ (to the nearest Tenths)
- f. $100 \times 13 = 1.300$ (to the nearest Ones)
- g. $58 \times 99 = 5,742$ (to the nearest Ones)
- h. $125 \times 6 = 750$ (to the nearest Ones)
- i. $650 \times 1 = 650$ (to the nearest Ones)
- j. $47 \times 34 = 1,598$ [to the nearest Ones]
- k. $51 \times 15 765$ (to the nearest Ones)
- L $450 \times 2 = 900$ (to the nearest Ones)
- m. $121 \times 4 = 484$ (to the nearest Ones)
- n. $7 \times 7 = 49$ [to the nearest Ones]

- 2.
- a. $80 \times 3 = 240$
 - $8 \times 30 = 240$
 - 8×3=74
 - $0.8 \times 3 = 24$
 - $8 \times 0.3 = 24$
 - $0.8 \times 0.3 = 0.24$
 - $0.08 \times 0.3 = 0.024$
 - $0.8 \times 0.03 = 0.024$
 - $0.08 \times 0.03 = 0.0024$
- b. $18 \times 42 = 756$
 - $180 \times 42 = 7.560$
 - $1.8 \times 4.2 = 7.56$
 - $0.18 \times 0.2 = 0.756$
 - $1.8 \times 0.042 = 0.0756$
 - $18 \times 0.42 = 7.56$
 - $0.018 \times 42 = 0.756$
 - $0.18 \times 0.42 = 0.0756$
 - $18 \times 4.2 = 75.6$
- c. $157 \times 56 = 8.792$
 - $157 \times 560 = 87.920$
 - $15.7 \times 5.6 = 87.92$
 - $1.57 \times 5.6 = 8.792$
 - $1.57 \times 0.56 = 0.8792$
 - $15.7 \times 0.56 = 8.792$
 - 157 × 5.6 = 879.2
 - $157 \times 0.56 \approx 87.92$
- d. $7 \times 600 = 4.200$
 - $7 \times 60 = 420$
- $7 \times 6 = 42$

- $7 \times 0.6 = 4.2$
- $7 \times 0.06 = 0.42$
- $0.7 \times 0.6 = 0.42$
- $0.7 \times 0.06 = 0.042$
- $0.07 \times 0.06 = 0.0042$
- a. The estimation of 5.3 is 5
 - The estimation of 27 is 3
 - The estimation of the product
 - $-5 \times 3 = 15$
 - The actual product = 5.3×2.7
 - = 14.31
- It is clear that the estimation is acceptable.
- b. The estimation of 18 8 is 19
 - The estimation of 7.1 is 7
 - The estimation of the product
 - $=19 \times 7 = 133$
 - The actual product = 18.8×7.1
 - = 133.48
- It is clear that the estimation is acceptable.
- c. The estimation of 7.82 is 8
 - The estimation of 4.3 is 4
 - The estimation of the product
 - $=8 \times 4 = 32$
 - The actual product = 7.82×4.3
 - = 33.626
 - It is clear that the estimation is acceptable.

4.					
a. 1.3 × 6.8 = 8.84 6					
0. 1.3	1	0.3	+	1.8	
6	6	1.8	+	0.8	
-			+	0.24	
0.8	8.0	0.24		8.84	
b. 5.7	× 9.1 = 51	1.87		45	
	5	0.7	+	6.3	
9	45	6.3	+	0.5	
0.1	0.5	0.07	+	0.07	
0.1	0.5	0.07	_	51.87	
c. 4.2	× 5.6 – 2	3.52		20	
	4	0.2	+	1	
5	20	1	+	2.4	
0.6	2.4	0.12	+	0.12	
0.0	2.7	0.12		23.52	
1.				23.32	
d . 8.3	× 2.6 = 2	21.58		16	
d . 8.3	× 2.6 = 2	21.58	+	16 0.6	
d. 8.3			++	16 0.6 4.8	
2	8	0.3		16 0.6 4.8 0.18	
	8	0.3	+	16 0.6 4.8	
2 0.6	8	0.3 0.6 0.18	+	16 0.6 4.8 0.18 21.58	
2 0.6	8 16 4.8	0.3 0.6 0.18	+	16 0.6 4.8 0.18 21.58 2.8 0.12	
2 0.6	8 16 4.8 × 0.49 =	0.3 0.6 0.18	+ +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63	
2 0.6 e, 7.3	8 16 4.8 × 0.49 = 7 2.8	0.3 0.6 0.18 3.577 0.3 0.12	+ + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63 0.027	
2 0.6 e, 7.3	8 16 4.8 × 0.49 = 7 2.8	0.3 0.6 0.18 3.577 0.3	+ + + + + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63	
2 0.6 e. 7.3 0.4 0.09	8 16 4.8 × 0.49 = 7 2.8	0.3 0.6 0.18 3.577 0.3 0.12 0.027	+ + + + + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63 0.027	
2 0.6 e. 7.3 0.4 0.09	8 16 4.8 × 0.49 = 7 2.8 0.63	0.3 0.6 0.18 3.577 0.3 0.12 0.027	+ + + + + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63 0.027 3.577 1.2 0.06	
2 0.6 e. 7.3 0.4 0.09	8 16 4.8 × 0.49 = 7 2.8 0.63 × 0.67 =	0.3 0.6 0.18 3.577 0.3 0.12 0.027	+ + + + + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63 0.027 3.577 1.2 0.06 0.14	
2 [0.6] e. 7.3 0.4 0.09 f. 2.1	8 16 4.8 × 0.49 = 7 2.8 0.63 × 0.67 = 2 1.2	0.3 0.6 0.18 3.577 0.3 0.12 0.027 1.407 0.1	+ + + + + +	16 0.6 4.8 0.18 21.58 2.8 0.12 0.63 0.027 3.577 1.2 0.06	

pl. 29.3	× 0.34	= 9.96	2		6
2	20	9	0,3	+	2.7
0.3	6	2.7	0.09	1 +	0.09
				+	0.8
0.04	8.0	0.36	0.012	+	0.36
				+	0.012
					9.962
h. 3.55	× 0.75	- 2.66	25		2,1
	3	0.5	0.05		0.35
0.7	2.1	0.35	0.039	5 1	0.035
0.05	0.15	0.025	0.002	-1+	0.15
0.05	Ų.15	0.025	0.002		0.025
				+	0.0025
					2.6625
i. 18.2	× 2.8 =	50.96			20
	10	8	0.2	+	16
2	20	16	0.4	+	0.4
0.8	8	6.4	0.16	+	8
0.0		U/F	0.10	_ +	-, -
				+	0.16
					50 96
j. 70.9	× 4,6 -	- 326.14	4		280
	70	0.9	}	+	3.6
4	280	3.6	,	+	42
0.6	42	0.5	4	+	0.54
0.0	44.	0.5			326.14
5.					1,000
a.	20	8	3	4	400
50	1.00	0 41	00	+	80
			2	+_	32
4	80	3	4		1,512
Pro	duct:	28 × 54	4 = 1,51	2	

b. 20 6	1,200
60 1,200 360	+ 360
	+ 80
4 80 24	+ 24
Product: 26 × 64 = 1,66	1,664
c. 30 4	1,500
50 1,500 200	+ 200
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+ 60
2 60 8	+ 8
Product: 34 × 52 = 1,76	1,768
d.	12,000
400 20 5	+ 600
30 12,000 600 150	+ 150
4 1,600 80 20	+ 1,600
4 1,000 60 20	+ 80
Product:	+ 20
425 × 34 = 14,450	14,450
e	3,200
40 /	+ 560
80 3,200 560	+ 120
3 120 21	+ 21
Product : 47 × 83 = 3,90	3,901
f.	400
	180
30 4 0.3	+ 24
6 180 24 1.8	+ 1,8 + 12
0.4 12 1.6 0.12	+ 1.6
Product:	+ 0.12
34.3 × 6.4 = 219.52	219.52
34.3 A 0.4 - 217,52	211.72

	g.					350
		50	5	0.3	+	35
	7	350	35	2.1	+	2.1
-	0.2	10	1	0.06	+	10
					+	1
)	9	oduct:			+	0.06
)	55	.3 × 7.2	= 398	3.16		398.16
)	h.					40
}		4	0.3	8.07	+	3
3	10	40	3	0.7	+	0.7
	4	16	1.2	0 28	+	16
	-	10		0.20	+	1.2
)	Pro	oduct:			+	0.28
)	4.3	7 × 14	= 61.18	3		61.18
)						
)	6. :	a. 1.786	5	b. 50	0.85	
	i	c. 12.4		d. 1.	4	
	-					
)	7.					10
		1	0.3	0.06	+	3
	10	10	3	0.6	+	0.6
	2	2	0.6	0.12	+	2
					+	0.6
		e weigl			+_	
		cks all	_			16 32
		.36 × 12				
	Est	imatio	n = 12	$\times 1 = 12$	2	
	8.					
		-ti	ion of	3.8 is 4		
					_	
	i ne e	stimat	ion of	15 2 is 1!	5	

The area of one wall

- $= 4 \times 15 = 60$ square meters
- The area of 4 walls = 4×60
- = 240 square meters
- So , Nadia needs paint to cover about 240 square meters.

Answers of multiple choice questions

- В
- 2. C
- C
- C
- В
- 8. B
- 9. B

3. C

6. B

10. B

Exercise 26

- 1.
- a. 2.88
- b. 42.92
- c. 171.72

- d. 0 027
- e. 4.025
- f. 68.155

- g. 7.546
- h. 28.032
- i. 0.1570

- i. 0.09552
- a. 3.8×6.4 or 0.38×64 or 38 × 0.64
- b. 5.32×1.7 or 0.532×17 or 53.2×0.17
 - or 532 × 0.017
- c. 826×4.3 or 82.6×43
- d. 18 × 14.5 or 1.8 × 145

- 2.43 , b. 29.35 a. 6.9 × 30 34 2187 11740 88050 14580 16.767 99.790
- 47.8 d. 2.03 C. 5.2 0.07 956 0.1421 23900 248.56
- 9.72 1.74 e. f. 0.46 35 × × 5832 870 38880 5220 4.4712 60.90
- 10.21 7.184 h. g. 0.64 6.3 × 36 4084 21552 61260 431040 6.5344 45.2592

i.		8.108	1		2.607
	×	0.45		×	41
		40540			2607
	+	324320		+	104280
		3.64860			104 887

k.		6.429	L		8.375
	×	1.9		×	20
		57861			0000
	+	64290	1	+	167500
		12.2151			167.500

m,		5.328	1	n.		6.461
	×	7.9			x	0.28
		47952	1			51688
	+	372960			+	129220
		42.0912				1.80908

- a. = b. < c. > d. = e. f. > g. -h. = 1.>
- 5.
- a. $7184 \times 6.3 45.2592$

	7	0.1	0 08	0.004
6	42	0.6	0.48	0.024
0.3	2.1	0.03	0.024	0.0012

- 42
- 0.6
- 0.48
- 0.024
- 2.1
- + 0.03
- + 0.024
- + 0.0012 45,2592

7184 b. 6.3 21552 431040 45.2592

Answers of multiple choice questions

- 2. C 3. B D 1.
- 5. 40 C 6. B
- 7. В 8. 9. A Α
- 10. B



- 1.
- a. centimeters b. meters
- c. meters
- d. kilometers
- e. millimeters
- 2.
- a. 1.000 ₂5.700
- **b.** 100 ₂258.9
- c. 1.000 , 87.200
- d. 1,000 + 3,020
- e. 0.001, 0.14
- f. 0.1 , 1.84
- a. 0.01 3 0.52
- h. 0.01 1.42
- i. 1,000 2317,000
- j. 0.001 ₂ 0.370
- k. 1,000 , 5,900
- L 10 ₅5.270
- m. 100 ,865.7 ,866 n. 0.001 ,7,4 ,7
- 0.3
- p. 2
- q. 1.8
- r. 17.4

- 3. a. C b. B e. D d. B e. D F. A a. C 1. D h. B I.B k.A L.C 4. a. X c. X b. ⊮ d. 🗸 e. X 1.11 g. X h. X 5. a. > h. < c d. > f. > e. > g. < h. >
- 6.
- a. The order is: 570 g, 0.75 kg, 0.762 kg, 790 g, 0.8 kg
- **b.** The order is: 300 mm 31 cm 0.315 m 319 mm 0.32 m
- c. The order is: 0.3 L + 0.35 L + 400.2 mL + 0.42 L + 427 mL
- a. 0.007 kg = 7 g $0.007 \times 1,000 \text{ Y} / \text{ N}$
- b. 51 mm = 5.1 cm $51 \times 10 \text{ Y} / N$
- c. 320 cm 2.30 cm $230 \times 0.01 \text{ Y} / \text{ N}$
- d. 4,800 mL = 4.8 L $4,800 \times 0.1 \text{ Y} / \underline{\text{N}}$

- e. 10 mm = 1 cm $10 \times 0.1 \text{ Y/N}$
- f. 500 m = 0.5 km $500 \times 0.001 \text{ Y} / \text{ N}$
- g. 4 cm = 0.04 m $4 \times 0.03 \text{ Y/N}$
- h. 500 mL = 0.5 L $500 \times 1,000 \text{ Y/N}$
- i. 5.67 m 567 cm $5.67 \times 10 \text{ Y/N}$
- j. 782 mm = 78.2 cm $782 \times 10 \text{ Y} / \underline{\text{N}}$
- k. 782 m = 0.782 km $782 \times 0.001 \text{ Y} / \text{ N}$
- L 315 cm = 3.15 m 315 × 0.01 \underline{Y}/N
- m. 1.5 m = 150 cm $1.5 \times 0.01 \text{ Y/N}$
- n. 6,410 cm = 64.1 m $6,410 \times 0.01 \text{ Y/N}$
- o. 6,410 m = 6.41 km $6,410 \times 0.001 \text{ Y} / \text{ N}$
- **p.** 350 cm = 3.5 m $350 \times 0.01 \text{ Y} / \text{ N}$
- **q.** 5.5 kg = 5,500 g $5.5 \times 1,000 \text{ Y/N}$
- r. 3,250 cm = 32,500 mm $3,250 \times 0.1 \text{Y/N}$

- s. 0.8 cm = 8 mm $0.8 \times 0.1 \text{ Y/N}$
- t. 10.3 m = 1,030 cm $10.3 \times 0.01 \text{ Y/N}$
- u. 9,320 mm = 932 cm9,320 × 10 Y / N
- v. 9,320 cm = 93.2 m $9,320 \times 0.01 \text{ Y/N}$
- w. 0.97 kg = 970 g $0.97 \times 1,000 \text{ Y/N}$
- **x.** 970 cm = 9.70 m $970 \times 100 \text{ Y} / \text{ N}$
- 8. 173 × 1,000 173,000 grams 201,000 grams > 173,000 grams
- 9. with both a because 3.648 × 1,000 = 3,648.0 grams

Answers of multiple engine questions

- 1. C
- 2. B
- 3. A

9. C

28

- 4. D
- 5. A
- 7. B 8. C
 - B 11 D
- 10. B
- 1. D
- 1. $124 \text{ cm} = 124 \times 0.01 = 1.24 \text{ m}$

 $1,230 \text{ mm} = 1,230 \times 0.001 = 1.23 \text{ m}$

The total = 1.22 + 1.24 + 1.23

-- 3.69 m

2. 32,460 g = 32,460 × 0.001 = 32.46 kg What Nader lost = 34.1 – 32.46 = 1.64 kg.

> 640 mL = 640 × 0.001 = 0.64 liter The quantity of orange = 0.64 × 12 = 7.68 mL The quantity of mango = 7 × 0.5 = 3.5 mL What they have together = 7.68 + 3.5 = 11.18 mL

 $114 \text{ cm} = 114 \times 0.01 = 1.14 \text{ m}$ $980 \text{ mm} = 980 \times 0.001 \quad 0.98 \text{ m}$ The length of the taken fabric -1.14 + 0.98 = 2.12 mThe length of the remaining part 4.56 - 2.12 = 2.44 m

600 grams $-600 \times 0.001 = 0.6 \text{ kg}$ 1,750 grams 1,750 \times 0.001 = 1.75 kg The mass of the computer = $2 \div 0.6 \div 0.03 \div 1.75 -4.38 \text{ kg}$

What Rania needs = 1.35 × 4 = 5.4 meters

Each package has 250 centimeters = 250×0.01 ≈ 2.5 meters

Since (2.5 × 2 < 5.4 < 2.5 × 3) So Rania will need 3 packages The length of bandages in $3 \text{ packages} = 3 \times 2.5 = 7.5 \text{ meters}$ The left over = 7.5 - 5.4= 2.1 meters

- 320 milliliters = 320 × 0.001 = 0.32 liters What they drank = 0.32 ± 0.25 0.57 liters The remaining = 1 - 0.57= 0.43 liters
- a. 138.2 centimeters = 138.2×0.01 = 1.382 meters What Ehab grew 1.5 - 1.382 = 0.118 meters **b.** 145 centimeters = 145×0.01 $= 1.45 \, \text{meters}$ What Eman grew = 1.45 - 1.34= 0.11 meters Ehab grew more The difference = 0.118 - 0.11
- 9. $42 \text{ mm} = 42 \times 0.1 = 4.2 \text{ cm}$ $63 \text{ mm} = 63 \times 0.1 = 6.3 \text{ cm}$

0.008 meters

- a. Perimeter of the 1st rectangle $= [4.2 + 8.7] \times 2 = 12.9 \times 2$ = 25.8 cmPerimeter of the 2nd rectangle $= [5.4 \pm 6.3] \times 2 = 11.7 \times 2$ = 23.4 cm The difference = 25.8 - 23.4
- h. Area of the 1st rectangle $= 4.2 \times 8.7 = 36.54$ square cm Area of the 2nd rectangle $= 5.4 \times 6.3 = 34.02$ square cm The difference = 36.54 - 34.02= 2.52 square cm

= 24 cm

10. 36 millimeters 36 × 0.1 3.6 centimeters 80 millimeters 80×0.1 8 centimeters Area of the 1st circuit = 7.25 x 3.6 = 26.1 square centimeters Area of the 2^{nd} circuit = 8×55 = 44 square centimeters The difference 144 - 261 = 17.9 square centimeters

Dividing Decimals

29

- a. $2.500 \div 1 = 2.500$ $2.500 \div 10 = 250$ $2.500 \div 100 = 25$ $2,500 \div 1,000 = 2.5$ $2,500 \div 0.1 = 25,000$ $2.500 \div 0.01 = 250.000$ $2,500 \div 0.001 = 2,500,000$
- b. 6.700 ÷ 1.000 = 6.7 $6.700 \div 100 = 67$ $6.700 \div 10 = 670$ $6,700 \div 1 = 6,700$ $6.700 \div 0.1 = 67.000$ $6.700 \div 0.01 = 670.000$ c. $800 \div 100 = 8$
- $800 \div 10 = 80$ $800 \div 1 = 800$ $800 \div 0.1 = 8.000$ $800 \div 0.01 = 80.000$
- d. $783 \div 10 = 783$ $783 \div 100 = 7.83$ $783 \div 1,000 = 0.783$ $783 \div 0.1 = 7.830$ $783 \div 0.01 = 78.300$ $783 \div 0.001 = 783,000$ e. $235.68 \pm 10 = 23.568$

 $235.68 \pm 100 = 2.3568$

235.68	÷ 1,000 0.235	AR R
	÷ 0.1 = 2,356.8	
	÷ 0.01 = 23,568	
	÷ 0.001 = 235,6	
f. 8.7 ÷ 10	= 0.87	
8.7 ÷ 100	0 – 0.087	
8.7 ÷ 1,0	00 = 0.0087	
8.7 ÷ 0.1	- 87	
8.7 ÷ 0.0	11 = 870	
8.7 ÷ 0.0	01 = 8,700	
2		
2.	L 272	0.053
a. 3.2	b. 273	c . 0.057
d. 57	e. 0.023	f. 216
g. 0.071	-	1. 0.04
j. 1,280	k 400	l, 7.3525
m. 7.36	n. 290,8	o. 0.105
p. 10,230	q . 0.01368	r. 0.5
3.		
a. 100	b . 0.01	c. 1,000
d. 5.67	e. 253,000	f. 250
4.		
510.05 × 0.001 -	0.51005	÷ 0.001 = 510,050
510.05 × 0.01		5 + 0.01 - 51,005
510.05 × 0.1 =	51005 510.0	05 - 0.1 = 5.100.5

510.05 × 10 - 5,100.5

510.05 × 100 = 51.005

510.05 × 1.000 = 510.050

510.05 ÷ 10 51.005

510 05 ÷ 100 5:1005

510.05 ÷ 1,000 = 0.51005

- a. $14.6 \times 10 = 146$ 14.6 : 0.1 - 146
- **b.** $387.23 \times 0.01 = 3.8723$ $387.23 \div 100 = 3.8723$
- c. $9.102 \times 100 = 910.2$ $9102 \div 0.01 = 910.2$
- d. 65 × 100 6.500 $65 \div 0.01 = 6.500$
- $0.39 \times 0.1 = 0.039$ $0.39 \pm 10 = 0.039$
- f. $0.75 \times 1.000 = 750$ 0.75 : 0.001 750
- α . 28.4 × 0.01 = 0.284 $28.4 \pm 100 = 0.284$
- N. 150.8 × 1.000 = 150.800 $150.8 \div 0.001 = 150,800$
- a. 2.35×100
- **b.** 2.35×0.1
- c. 2.35×10
- $d. 2.35 \times 0.001$

- 7.
- a. 0.01 b. 100
- c. 100

- d. 0.001
 - e. 10 h. 0.1
- f. 100

c. >

- g. 0.01
- a. = b. <
 - f. < $d_{i} =$ e. >
 - g. < h.>

- 3
- $a_{1}712 \text{ ml} = 0.712 \text{ l}$ $712 \times 0.001 = 0.712$ 712 : 1.000 = 0.712
- b. 73.5 ka = 73.500 a $73.5 \times 1.000 = 73.500$ $73.5 \div 0.001 = 73.500$
- c. 23 m = 2.300 cm $23 \times 100 = 2.300$ $23 \div 0.01 = 2.300$
- **d.** 25.300 cm = 253 m $25.300 \times 0.01 = 253$ $25.300 \div 100 = 253$
- e. 300 a = 0.3 kg $300 \times 0.001 = 0.3$ $300 \div 1.000 = 0.3$
- f. 763.4 m = 0.7634 km $763.4 \times 0.001 = 0.7634$ $763.4 \div 1000 - 0.7634$
- q. 5,200 mm = 5.2 m $5.200 \times 0.001 = 5.2$ $5.200 \div 1.000 = 5.2$
- h, 125 L= 125,000 mL $125 \times 1,000 = 125,000$ $125 \div 0.001 = 125.000$
- i. 5.200 mm 520 cm $5.200 \times 0.1 = 520$ $5,200 \div 10 = 520$

- $i. 9.800 \, \text{cm} = 0.098 \, \text{km}$ $9.800 \times 0.00001 = 0.098$ $9.800 \div 100.000 = 0.098$
- 10. The price = $5.25 \times 100 = 525 L.E.$
- 11. $125 \text{ a} 125 \div 1.000 = 0.125 \text{ kg}$ The weight of 10 bars = 0.125×10 $-1.25 \, \mathrm{kg}$
- 12. The total = $725 \times 10 = 7.250 \text{ m}$
- 13. $2.5 \text{ litres} = 2.5 \times 1.000 = 2.500 \text{ mL}$ 2,500 ÷ 10 = 250 The number of glasses is 10
- 14. The temperature at which water boils - 1,100 × 0,1 or 1,100 ÷ 10 then each of [B] and [C] is correct

Answers of multiple shales questions

- 1. D
- 2. C

3. В

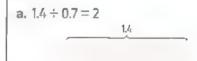
6. C

9.

10. B

30

- 1.
- a. How many groups
- b. How many in each group
- c. How many in each group
- d. How many in each group
- e. How many groups
- f. How many groups
- g. How many in each group





b. $1.2 \pm 0.2 \pm 6$







- 3.
- a. $2.4 \div 0.4 = 6$



- b. 4.2 : 0.6 = 7
- c. 8 d. 7 e. 0.45 £ 196
- a. 1.5 L. 5 i. 1.75 h. 5 [Model by yourself]
- 4
- a. overestimate
- b. underestimate
- c. overestimate
- 5.
- a. $49 \div 7 = 7 \text{ nr}$
 - $42 \div 7 = 6$
- b. $25 \div 5 = 5 \text{ or}$ $20 \div 5 = 4$
- c. $50 \div 10 = 5$
- d. $36 \div 6 = 6$ or $30 \div 6 = 5$
- e. $72 \div 6 = 12$
- f. $12 \div 3 = 4 \text{ or}$ $9 \div 3 = 3$
- a. $45 \div 5 = 9$
- h. $99 \div 9 = 11$
- 1. $120 \div 6 = 20$
- $1.520 \div 20 26$
- $k.60 \div 20 = 3$
- 1. $500 \div 20 = 25$

- 6.
- a $80 \div 16 = 5$ It will take about 5 hours
- h. 25 + 53 = 78The total mass is about 78 t
- c. $300 \div 30 = 10$ About 10 floors they will fit with piping
- $d. 224.6 \times 10 2.246$ They can support 2,246 kg
- e. $666 \div 9 = 74$ They can put about 74 m in each floor
- $f. 40 \div 4 = 10$ Will be there about 10 windows

Answers of multiple choice questions

- 1. B
- 2. B 5. B
- 3. В

4. A

- 6.
- В
- 8. C
- 9.

10. D

Exercise 31

- 1.
- b. $42 \div 7 = 6$
- c. $36 \div 4 = 9$
- d. $28 \div 4 = 7$
- e. $72 \div 8 = 9$
- f. $7.650 \div 765 = 10$ q. $33 \div 11 = 3$

- 2.
- a. $26.4 \div 2 13.2$
- b. 48.6 : 9 = 5.4
- c. $26.7 \div 12 = 2.225$

- d. $438.4 \div 32 = 13.7$
- e. $19.32 \div 92 \simeq 0.21$
- f. $115.5 \pm 35 = 3.3$
- g. $3.570 \div 7 = 510$
- **h.** $337.5 \div 15 = 22.5$
- 1. $777.28 \div 64 = 12.145$
- 3.
- a. Since: $8.018 \approx 8.019 \approx 0.2$, then the estimate of the quotient is $8 \div 0.2 = 80 \div 2 = 40$.
- b. Since: 6.235 ≈ 6 ± 0.58 ≈ 0.6 then the estimate of the quotient $15.6 \pm 0.6 = 60 \pm 6 = 10$
- c. Since: $0.1932 \approx 0.2 \cdot 0.92 \approx 1$, then the estimate of the quotient is $0.2 \div 1 = 0.2$
- d. Since: 77.428 = 77 , 6.94 = 7 then the estimate of the quotient Is 77 + 7 = 11
- L. a.
- 10.33 5) 51.65 -5016 15 15 15 nn
- Estimate: $50 \div 5 = 10$
- Quotient: $51.65 \div 5 = 10.33$
- The answer is reasonable

12.17 6) 73.02 - 6 13 - 12 10 42

b.

- Estimate: $72 \div 6 = 12$
- Quotient: $73.02 \div 6 = 12.17$
- The answer is reasonable
- 03.89 16)62.24 - 48 142 - 128 144
- Estimate: $64 \div 16 = 4$
- Quotient: $62.24 \div 16 = 3.89$
- The answer is reasonable
- d. 019.65 30) 589.50 -30289 -270195 -180150 150

- Estimate: $600 \div 30 = 20$ Quotient : $589.5 \div 30 = 19.65$ The answer is reasonable
- $e. 76.4 \div 7.2 = 764 \div 22$ 22)264 -- 22 44 -44

Estimate: $26 \div 2 = 13$ Quotient: $26.4 \div 2.2 = 12$ The answer is reasonable

f. 99: 0.4 = 990: 4

Estimate: $100 \div 0.4 = 1.000 \div 4$ = 250

Quotient $99 \div 0.4 = 247.5$ The answer is reasonable

q. Estimate: $1.5 \div 0.05 = 150 \div 5 = 30$ Quotient: 1.5: 0.04 150: 4 37.5 The answer is reasonable

b. Estimate: $10 \div 2 = 5$ Quotient $\cdot 9956 \pm 19 = 9956 \pm 19$ = 5 24

The answer is reasonable

- i. Estimate: $1.5 \pm 0.05 = 150 \pm 5 = 30$ Ountient: $1.43 \pm 0.05 = 143 \pm 5 = 28.6$ The answer is reasonable
- i. Estimate: $3.5 \div 7 = 0.5$ Quotient: $3.431 \pm 7.3 = 34.31 \pm 73$ = 0.47

The answer is reasonable

- k. Estimate: $45 \pm 0.5 = 450 \pm 5 = 90$. Quotient: $44 \div 0.5 = 440 \div 5 = 88$ The answer is reasonable
- L. Estimate: $0.5 \div 0.05 = 50 \div 5 = 10$ Quotient: $0.51 \div 0.04 = 51 \div 4 = 12.75$ The answer is reasonable
- m. Estimate: $100 \div 1 \cong 100$ Quotient: $70 \div 0.7 = 700 \div 7 = 100$ The answer is reasonable
- n. Estimate $.1 \div 0.5 = 10 \div 5 = 2$ Quotient: $0.91 \div 0.5 = 9.1 \div 5 = 1.82$ The answer is reasonable
- o. Estimate: $58 \div 0.04 = 5.800 \div 4$ = 1.450Quotient: $57.6 \div 0.04 - 5.760 : 4$ = 1,440

The answer is reasonable

- p. Estimate: $2 \div 1 = 2$ Quotient: $1.3 \div 0.5 = 13 \div 5 = 2.6$ The answer is reasonable
- a. $9 \div 35 \approx 0.3$ b. $15 \div 38 \approx 0.4$
- c. $8 \div 7 \approx 11$
- d. $13 \div 77 \approx 0.2$
- e. $121.1 \div 9 \approx 13.5$ f. $546.8 \div 53 \approx 10.3$
- g. $53.27 \div 2.1 = 532.7 \div 21 \approx 25.4$
- h. $24.31 \div 0.97 = 2.431 \div 97 \approx 25.1$

5

- a. $46 \div 2.8 = 460 \div 28 \approx 16.43$
- b. $7.4 \pm 5.1 = 74 \pm 51 \approx 1.45$
- c. $7.034 \div 1.7 = 70.34 \div 17 \approx 4.14$
- d. $0.4582 \div 5.2 = 4.582 \div 52 \approx 0.09$

- a. $8.5 \div 2.7 = 85 \div 27 \approx 3.1$
- b. $13.029 \div 0.52 = 1.302.9 \div 52 \approx 25.06$
- c. $28.448 \div 1.2 = 284.48 \div 12 \approx 23.7$
- **d.** $45.862 \div 3.5 = 458.62 \div 35 \approx 13.103$
- b. < a. > $\mathbf{r}_{-} \equiv$ d. < e. > f. =

q. >

- 9.
- a. 6.67 **b**. 4.55 c. 5.8
- d. 83.833
- e. 6
- f. 11

g. 6

10. The error: the student multiplied the divisor by 10 and divided the dividend by 10

> Correct: $77.43 \pm 0.3 = 774.3 \pm 3$ = 258.1

11.

- 1. The length of each pipe = 150 ÷ 40 -- 3.75 meters
- **2.** The distance = $2.050 \div 75$ ≈ 27333 meters
- 3. The length = $4.5 \div 30 = 0.15$ meters
- 4. Each cup will have $= 20 \div 50$ = 0.4 liters
- 5. The number of parts = $59.5 \div 3.5$ $= 595 \div 35 = 17 \text{ parts}$
- 6. The distance covered in one hour $= 221.65 \div 2.5 = 2216.5 \div 25$ $= 88.66 \, \text{km}$

7. The number of floors

 $= 42 : 2.8 - 420 \div 28 - 15$ floors

8. The length = $9.43 \div 2.4$

 $= 94.3 \div 24 \approx 3.93$ cm.

- 12.
- a. 640
- **b.** 6.4
- c. 4,300
- d. 0.064

- 13.
- a. 46
- **b.** 5.7
- c. 46
- d. 570
- e. 460
- f. 5.7

Answers of multiple choice questions

- 1. B
- 2. B
- 3. C
- 5. C
 - C
- 6. B

10. D

C

32

1.

The gold used = 0.85 kg - 226 gm= 850 - 226 = 624 gm

The number of rings = $624 \div 4$

= 156 rings

2.

The rest 125,000 – 31,250 93.750 LE

The value of each installment $93,750 \div 72 \approx 1,302 \text{ LE}$

3.

The mass of 6 pomegranates

= 2.29 - 1.03 = 1.26 kg

The mass of 3 pomegranates

 $= 1.26 \div 2 = 0.63 \text{ kg}$

The mass an empty box

1.03 - 0.63 = 0.4 kg

4

The mass of one larger weight and one smaller weight = 100 : 2 = 50 kg

The mass of the two larger weights

=50+12.4=62.4 kg

5.

The price of 12 candles = 1.95×10

19.5 LE

The price of 96 candies $= 19.5 \times 8$

= 156 LE

The price of 4 candies -1.95×4

= 7.8 LE

What the customer will spend

= 156 + 7.8 = 163.8 LE

6.

What she will travel in 1 hour

 $= 42.12 \div 2 = 21.06 = 21 \text{ km} \text{ and } 60 \text{ m}$

7.

Magdy has 18 liters and 250 milliliters = 18.25 liters

What Magdy poured in the vases = 18.25 - 0.85 = 17.4 liters Water in each vase $= 17.4 \div 24$

= 0.725 liters

8

What he used for the large planters = $2.8 \times 5 = 14 \text{ kg}$ The rest = 30 - 14 = 16 kg

The number of pots = $16 \div 0.4$ = 40 pots

g.

A package of cake

= a package of cookies + 0.08

The mass of 3 packages of cookies

 $= 0.08 \times 6 = 0.48 \text{ kg}$

The mass of 1 package of cookies

 $-0.48 \div 3 = 0.16 \text{ kg}$

The mass of 1 package of cake

 $-0.16 \pm 0.08 = 0.24 \,\mathrm{kg}$

er va	17(35)	ไรรียระที่กับกใ	
1.	a.A	b. C	c. B
	d. A	e.B	f. A
2.	a. 7.041	b. 10	c. 400
	d. 11.11	e.6	f. 523.4
3.	а. ж	b. 🗸	c. X
	d. X	e. 🗸	f. X
4.	a. → 3	b>	1
	c. → 4	d	2

5.

The length of each piece $= 8.75 \pm 25 = 0.35$ meters

6.

What the family pays

 $= 83.5 \times 6.5 = 542.75$ LE

Answers of unit

€ . (<u>______</u>)

Numerical Expressions and Patterns

» Concept 1: Evaluating Numerical Expressions

» Concept 2: Analyzing Numerical Patterns



Concept

33

Evaluating Numerical Expressions

distance.

- 1.
- a. $10 \times 4 3 = 40 3 = 37$
- b. $15 \div 3 + 2 = 5 + 2 = 7$
- c. $12 + 24 \div 4 + 8 = 12 + 6 + 8 = 26$
- d. $34 \times 28 \div 2 + 5 = 952 \div 2 + 5$ = 476 + 5 = 481
- e. 145 42 7.11 × 10 ± 13.2
 - = 145.42 71.1 + 13.2
 - = 74.32 + 13.2 = 87.52
- f. $102.15 + 6 \div 1.2 34 \times 2.3$
 - $= 10215 + 5 34 \times 2.3$
 - =102.15 + 5 78.2
 - = 10715 78.2 28.95
- $g. 35 \times 0.1 + 89.14 \div 0.1$
 - $= 3.5 + 89.14 \div 0.1$
 - 35+891.4=894.9
- h. $56.5 \times 2.3 15 + 12.7$
 - = 129.95 15 + 12.7
 - = 114.95 + 12.7 = 127.65
- i. $5978 \div 6.1 + 13 \times 1.7 = 98 + 13 \times 1.7$
 - -- 98 + 22.1
 - = 120.1
- j. $1,403.5 12.3 \div 0.01 + 9.8$
 - = 1,403.5 1,230 + 9.8 = 173.5 + 9.8
 - = 183.3

- k. $82.43 \times 3.1 + 4.05 : 0.01 2.5$
- $= 255.533 + 4.05 \div 0.01 2.5$
- =255.533+405-2.5
- = 660.533 2.5 658.033
- L $90.7 + 116.6 \times 0.1 \times 2 20$
 - $= 90.7 + 11.66 \times 2 20$
 - = 907 + 23.32 = 20
 - = 114.02 20 = 94.02
- 2.
- 1. B

2. E

3. M

4. P

- 3.
- a. $45.84 + 13.05 \div 5 + 20.32 = 1.14 \times 2.1$
 - =45.84 + 2.61 + 20.32 + 2.394
 - = 68.77 2.394 = 66.376
- **b.** $[45.84 + 13.05] \div 5 + 20.32 1.14 \times 2.1$
 - $=58.89 \div 5 + 20.32 2.394$
 - = 11.778 + 20.32 2.394
 - =32.098 2.394 29.704
- c. $45.84 + 13.05 \div 5 + 20.32 [1.14 \times 2.1]$
 - =45.84+2.61+20.32-2.394
 - -6877 2.394 = 66.376
- **d.** $45.84 + 13.05 \div 5 + [20.32 1.14] \times 2.1$
 - $=45.84 + 2.61 + 1918 \times 2.1$
 - =45.84 + 2.61 + 40.278 = 88.728

e. $45.84 + [13.05 \div 5 \div 20.32 - 1.14] \times 2.1$ = $45.84 + [2.61 + 20.32 - 1.14] \times 2.1$ = $45.84 + [22.93 - 1.14] \times 2.1$ - $45.84 + 21.79 \times 2.1$ = 45.84 + 45.759 = 91.599

4.

- a. 30 × 2.5 + 4718 = 3.12 : 0.1 = 75 + 4718 = 31.2 = 12218 = 31.2 = 90.98
- b. $30 \times [2.5 + 47.18 3.12 \div 0.1]$ = $30 \times [2.5 + 47.18 - 31.2]$ = $30 \times [49.68 - 31.2]$ = $30 \times 18.48 - 554.4$
- c. $30 \times [2.5 + (47.18 3.12) \div 0.1]$ = $30 \times [2.5 + 44.06 \div 0.1]$ = $30 \times [2.5 + 440.6]$ = $30 \times 443.1 = 13293$
- d. $[30 \times 2.5 + 47.18 3.12] \div 0.1$ $[75 + 47.18 - 3.12] \div 0.1$ $= [122.18 - 3.12] \div 0.1$ $= 119.06 \div 0.1 = 1,190.6$
- e. $[30 \times [2.5 + 47.18 3.32]] \div 0.1$ = $[30 \times (49.68 - 3.12]] \div 0.1$ = $[30 \times 46.56] \div 0.1$ = $1396.8 \div 0.1 - 13968$

5.

a. $[6-5] \times 7 + 2 = 1 \times 7 + 2 = 7 + 2 = 9$

- b. $9 \times [4+5] \div 3 = 9 \times 9 \div 3$ = $81 \div 3 - 2/$
- c. $2 \times 18 \div 9 + 9 = 36 \div 9 + 9 = 4 + 9$
- **d.** $88 \div [11 7 + 4] = 88 \div [4 + 4]$ $88 \div 8 - 11$
- **e.** 3.8 × [9.5 + 6.25] = 3.8 × 15.75 59.85
- f. $3.8 \times 9.5 + 6.25 = 36.1 + 6.25$ = 42.35
- g. $20 + 33.29 \times 10 = 6.1$ 20 + 332.9 - 6.1 = 352.9 = 6.1 = 346.8
- h. $[20+33.29] \times 10-6.1$ = $53.29 \times 10-6.1 = 532.9-6.1 = 526.8$
- i. $20 + [33.29 \times 10 6.1] \times 10$ = $20 + [332.9 - 6.1] \times 10$ = $20 + 326.8 \times 10$ = 20 + 3.268 = 3288
- j. $[20 + 33.29 \times (10 6.1)] \times 10$ = $[20 + 33.29 \times 3.9] \times 10$ = $[20 + 129.831] \times 10$ = $[49.831 \times 10 = 1.498.31]$
- 6.
- a. $[29.2 + 43] \times 0.01 + 15 \div 0.1$ or $29.2 + 43 \times [0.01 + 15] \div 0.1$
- b. $158 \div 2 + 6 \times [10.5 5]$ or $158 \div [2 + 6] \times [10.5 - 5]$

- c. $(57-11) \times 1.2 + (3.4+1.9) : 10$ or $57-11 \times 1.2 + (3.4+1.9) \div 10$ (Answers may vary)
- 7. $15.25 \div [2+3] + 6.8 \div 2$
- 8. Grouping symbols allow for the operations to be preformed in a different order
 3.2 + 14.1 ÷ 10 = 3.2 + 1.41 = 4.61
 [3.2 + 14.1] ÷ 10 = 17.3 ÷ 10 = 1.73
- Because the order of operation in each expression is different
 217 + 354 × 0.1 = 217 + 354
 = 252.4
 [217 + 354] × 0.1 = 571 × 0.1 = 571
- 10. Marwan is correct 47.1 × 31 – 28.4 ÷ 4 + 33.2 = 1,460.1 – 7.1 + 33.2 = 1453 + 33.2 1486 2

Answers of multiple choice questions

- B 2. C 3. C
- 4. D 5. B 6. C

Exercise 34

- 1. a. $(3.8 + 5.6) \times 2.4$ b. $(5.6 3.8) \times 2.4$
- c. $3.8 \times 5.6 2.4$ d. $(3.8 + 5.6) \div 2.4$

- 2.
- a. $[7.4 \pm 2.3] \times 10 = 9.7 \times 10 = 97$
- b. $[4.62 3.1] \times 2 = 1.52 \times 2 = 3.04$
- c. $[6.3 \times 12.4 + 21.88] \div 20$ = $[78.12 + 21.88] \div 20 = 100 \div 20 = 5$
- d. $(93 \div 0.3 + 114.7) \div 5$ = $(310 + 114.7) \div 5$ = $424.7 \div 5 \approx 84.94$
- e. [224.7 [30.4 + 87 + 17.5]] × 100 = [224.7 – 134.9] × 100 = 89.8 × 100 – 8.980
- f. $[2,325 \div 10 162 + 24.5] \times 3$ = $[232.5 - 162 + 24.5] \times 3$ = $[70.5 + 24.5] \times 3 \cdot 95 \times 3 = 285$
- g. $[7.6 \times 100 34.3 + 12.4] \div 0.1$ $= [760 - 34.3 + 12.4] \div 0.1$ $= [725.7 + 12.4] \div 0.1 = 738.1 \div 0.1$ = 7.381
- h. 75 [(1.3 + 3.45) × 8 2.02] = 75 – [4.75 × 8 – 2.02] = 75 – [38 2.02] – 75 – 35.98 = 39.02
- i. $1,168 \div [[10 9.27] \times (54 + 46)]$ = $1,168 \div [0.73 \times 100]$ = $1,168 \div 73 = 16$

- a. The left money = 102.5 4 × 19.5 = 102.5 - 78 = 24.5 pounds
- b. The saved money = 1,000 + [50 + 30] × 4 = 1,000 + 80 × 4 = 1,000 + 320 = 1,320 L.E.
- c. The amount of juice in each bottle = $[11.8 - 4] \div 6 = 7.8 \div 6$ = 1.3 liters
- d. The left distance = 3,900 -- [560 × 3 + 430 × 5] = 3,900 -- [1,680 + 2,150] = 3,900 -- 3,830 = 70 kilometers

- e. The mass of one of the smaller weights $- (100 - 33.75 \times 2) \div 2$ $- (100 - 67.5) \div 2$ $- 32.5 \div 2 = 16.25 \text{ kg}$
- f. The distance in meters = $38.7 \times 1,000 \div 2 \div 60$ = $38,700 \div 2 \div 60 = 19,350 \div 60$ = 322.5 meters
- g. The water in each vase= (15.75 3.75) : 16= 12 ÷ 16 0.75 L

Answers of multiple choice questions 1. C 2. D 3. D

4. A 5. B 6. B 7. D 8. A

Concept

2

Analyzing Numerical Patterns

35

1.

	Set	Pattern? (Y/N)	Rule
1.	5 -10 -20 -40 -80	Y	n×2
2.	3 16 19 15 21 128 1	N	
3,	15 +3 +4.5 +6 +7.5 +	Y	n + 1.5
4.	5 • 3 • 6 • 1 • 7 • 5 •	N	
5.	1 - 3 - 9 - 18 - 54	N	
6.	85 ,73 ,61 ,49 ,37 ,	Y	n-12

- a. n + 5 b. n × 8 c. n ÷ 7 d. n + 7 e. n ÷ 5 f. n - 10 g. n × 6 h. n × 4 l. n × 2 l. n × 10 k. n ÷ 6 l. n + 0.5
- 3.
- a. 52,44,36,28,20,12,4 Rule:n=8
- b. 23 : 27 : 31 : 35 : 39 : 43 : 47 Rule : n + 4
- c. 2,4,8,16,32,64,128 Rule:n × 2
- d. 17 19 21 23 25 27 Rule: n + 2
- e. 32,16,8,4,2,1 Rule:n+2
- f. 1,8,15,22,29,36 Rule:n+7

4.

- a. A = 24, B = 8, rule: $n \times 4$
- b. A = 45, B = 6, C = 63, rule: n × 9
- c. A=14,8 14,C-12,rule:n-2
- **d.** $A = 48 \cdot 8 = 51 \cdot \text{rule} : n = 21$
- e. $A = 18 , B = 20 , rule : n \times 2 + 2$
- f. A = 14, rule: $n \div 2 + 1$

a. X	b. x	C. 🗸
d. 🗸	e. 🗸	f. 🗸

- 6.
- a. 4,11,18,25,32
- b. 1, 4, 7, 10, 13
- c. 10 , 5 , 2.5 , 1.25 , 0.625
- d. 3,4.5,7.5,13.5,25.5
- e. 2,6.3,19.2,57.9,174
- f. 5.25 , 10.5 , 21 , 42 , 84
- 7. Walid's work is correct. Each input is divided to get the output. The input can be represented by a variable. When you plug the numbers into Walid's rule, you get the correct outputs for the table. Yahia's work is backwards. The output cannot be represented with a variable
- 8.
- a. Blue: 25 Yellow: 16
- b. Blue: 36 Yellow: 25
- c. Blue: 121 Yellow: 100
- d. A = 121 , B = 196 , C = 361 , D = 361

Answers of multiple choice questions

- 1. B
- 2. C
- 3. C
- . A 5. D
- 7. A 8. I

36

- 1.
- a. 9
- b. A = 12 , B = 14 C = 19 , D = 19 , E = 24
- 2
- a. A=20 , B=30 , C=4 , D=5
- b. 9 liters
- c. 240 km
- 3.
- a. A=2 , B=4 , C=8
- **b.** 12 kg
- c. 9 kg
- 4
- a. $A = 2.5 \Rightarrow B 5 \Rightarrow C 10$
- b. 17.5 m
- c. 17 dresses
- 5.
- a. 3 L.E.
- b. 2 L.E.
- c. $2+[n-1]\times 3$
- 6.
- a. A=100 , B=110 , C=120 , D=13 , E=140
- b. 200 loaves
- 7. A=30 , B=55

Unit 6 Assessment

- 1. a. x b. x c. x
 - d. 🗸 e. 🗸 f. 🗴
- 2. a.C b.B c.B d.C e.D f.C
- 3. a. 184.95 b. 29
 - c. 8.5 × 3.2 12.4 , 14.8
 - $d.n \pm 7$
 - e. 3.4 ÷ 2 f. n × 3
- 4.
- a. 12

b. 15

c. 6

d. 7

5

The money left = $1,000 - (5 \times 33 + 5 \times 27)$

- = 1,000 [165 + 135]
- = 1,000 300
- = 700 pounds

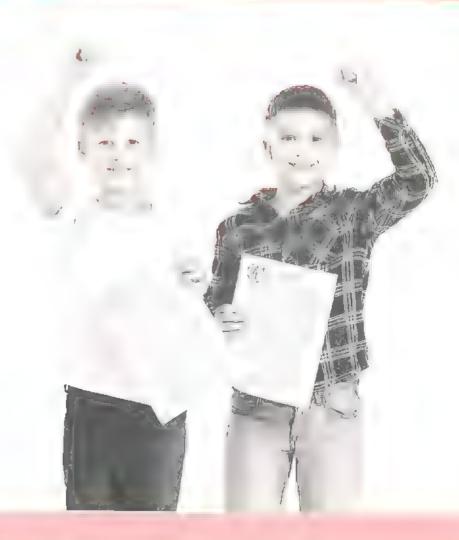
6

Ali was $\frac{1}{2} \times 8 = 4$ years

Then the rule is n-4

The age of Ali = 18 - 4 = 14 years

Answers of Europhy Ston Rovinson





12

C. X

- 1. a. Thousandths , 0 007
 - **b.** 5.017
 - c. Eight and five thousandths
 - d. Hundredths
- 2. a. X
- b. 🗸
- d. X
- e. X
- 3. a. 0.5
- **b.** 50
- c. 0.05
- **d.** 0.005
- 4. **a.** 0.001 or $\frac{1}{1000}$
- b. Ones
- c. 0.04 or 4
- 5. a. Four and fourteen thousandths
 - b. Two hundred seven thousandths

Cumulative Assessment

- 2
- b. 🗸
- c. x d. x
- 2. a. 0.37
- b. 2,516.4
- c. 7,000.48
- d. tens -50
- e. thousandths
- f. 25,006.901

3.

Thousands	-	One:	5	1	De	cim	als
0	н	Т	0		Tenths	Hundredths	Thousandths
		1	7		4	3	9

- a.10+7+0.4+0.03+0.009
- b. 17 + 0.439 (Answer may vary)
- c. 0.03 or 3
- d. Tenths
- **e.** 0.009 or $\frac{9}{1000}$
- f. decreased , 0.4 , 0.04

Cumulative Assessment



- l, a. < b. > c. < d.
 - $e. < \qquad f. < \qquad g. =$
- 2. a. C b. D
- d. B
- 3. a. 23.141 , 23.411 , 32.141 , 32.411
 - b. 1.135 1.315 1.351 1.531
- 4. 85 × 10 = 850

Thousands	0	ne	<u>!</u> S		. Decimals	
0	Н	Ŧ	0	4	Tenths	Hundredths
		8	5	1		
	8	5	0			

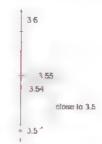
- a. increased.
- b. increased ,5,50

Cumulative Assessment



- **1. a.** 76.51 **b.** 0.999
 - c. 10
- d. 7.3156
- 2. a. X b.
 - V C.X
- d. 🗸

- 3. The number may be:
 - 15.361
- 15.355
- 15.362
- 15.356 15.357
- 15.363
- [Answer may vary]
- 4. Then 3.54 ≈ 3.5



5. a. D b. D c. B d. B

Cumulative Assessment

- 1. a. 23.33
- b. 57.657
- c. 11.95
- d. 23
- 2. a. 132
- b. 1.17
- c. 34.57
- d. Hundredths f. 505 505
- e. 3.624
- 3. 189 ÷ 100 1.89

Thousands	0	ne	25		Di	ecimals
0	Н	Т	O		Tenths	Hundredths
	1	8	9			
			1)	8	9

- a. decreased
- b. decreased, 80,0.8
- c. decreased , 9 , 0.09
- d. decreased 100 1
- The total 136 20 + 64 30 = 200 5 LF

Cumulative Assessment



- 1. a. 0.125
- b. 52.15
- c. 2.111
- d. 0.25
- 2. a. 24.5
- b. 45.21
- c. hundredths
- d. $50 \pm 5 \pm 0.5 \pm 0.05$
- e. 34.2
- f. 26
- 3. a. > b. =
- c. < d.
- 4. a. C
- b. C c
-) d. A

Cumulative Assessment



- a. x b. x c. v d. v
- a. 7.07 b, 0.07
- a. < b. > c. = d
- 4. a. D b. C c. C d. D
- 5 The remainder 95.5 35./5 – **59./5 L**E.
- They have together 29.75 + 15 ¹/₂ 29.75 + 15.5
 45.25 L E.





- 1. a. X
- h V
- e. 🗸
- d. X
- 2. a. k = 90.90 75.85 = 15.05b. $14.75 \pm m = 20.75$
 - - --- m = 20.75 14.75 = 6
- 3. a. h = 3.56 + 2.04 = 5.6
 - b. 54 15+v
 - --- v = 5.4 1.5 = 3.9
- 4. a. 3.641
- h. 2.135
- d. Thirteen and thirteen thousandths.
- e. 707.07
- The equation X = 3.2 = 2.7X = 32 + 2.7 = 5.9
- 6. The equation: 7.5 X 4.91 X = 7.5 - 4.91 = 2.59

Cumulative Assessment



- d. → 2
- 2. a. m 87.415 29.125 = 58.29 **b.** h = 41.126 + 25.123 = 66.249
- b. A c. C

- b. X
- Hany has L.E. 3.25 and his friend has L.E. 6.25 What is the total money they have together? [Answer may varv]

Cumulative Assessment





a.





- $36 = 2 \times 2 \times 3 \times 3$



- $15 = 3 \times 5$
- b. 🗸
- e. X
- 4. a. 2 b. 2,7
- c. 3,000.003
- d. 9 e. 3

- a, b = 3
- d. m = 4.11 e. k = 3 f. l = 1.5

Cumulative Assessment



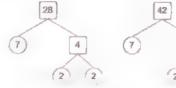
a.

(2)





- $12 = 2 \times 2 \times 3$ $18 = 2 \times 3 \times 3$
- $GCF = 2 \times 3 = 6$
- b.



- $28 = 2 \times 2 \times 7$ $42 = 2 \times 7 \times 3$
- $GCF = 2 \times 7 = 14$
- 2. a. 1,2,4,8
 - b. 1, 2, 3, 4, 6, 8, 12, 24
 - € 1,2,4,8
 - d. B
- 3. a. X
- b. 🗸
 - C. X
- d. 🗸
- f. 1/

- b. a = 1.5 c. N = 1 / a. 30 b. 60 c. 30
 - 5. a. x = 346 21 136
 - h. $m = 35 \div 5 = 7$
 - c. n = 0 + 123 = 0
 - d. y = 4.62 + 1.7 6.32

Cumulative Assessment



- 1. a X
- f. X

- 2. a. 0 b. 1
 - c. 7.070.707 d. 95.61
 - e. 19.514
- F 35
- a. 9,3,9
- 3. a. 0.46.12.18.24.30.36
 - b. 0 -4 -8 -12 -16 -20 -24
 - c. 12 , 24
 - d. 12



- $12 = 2 \times 2 \times 3$
- 3 x 3
- $LCM = 2 \times 2 \times 3 \times 3 = 36$







(2)







$$8 = 2 \times 2 \times 2$$

$$\frac{24 = 2 \times 2 \times 2 \times 3}{\text{LCM} - 2 \times 2 \times 2 \times 3 = 24}$$

b.



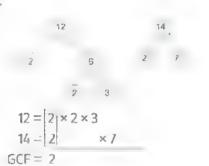
$$10 = 2 \times 5$$

$$12=2 \times 2 \times 3$$

$$LCM = 2 \times 5 \times 2 \times 3 = 60$$

Cumulative Assessment

a.



 $LCM = 2 \times 2 \times 3 \times 7 = 84$

b.









 $ICM = 2 \times 5 \times 3 = 30$

10 - 2 × 5

15

GCF 5

b. $2 \times 2 \times 5 \times 7 = 140$

5 × 3

- c. 20
- d. 700

a. Thousandths

- c. 1
- b. 5 d. 2
- e. 3.59
- f. 2634.9

4. We have to find LCM

$$25 = 5 \times 5$$

$$LCM = 3 \times 5 \times 5 = 75$$

, then they will chime together every 75 minutes.

We have to find GCF







$$GCF = 2 \times 3 = 6$$

, then the greatest number of fruit baskets is 6 fruits



Cumulative Assessment

- 1. a. 700
- b. 30,000
- c. 8.000
- d. 120
- e. 500.000 f. 2.000
- a. --- 2
- b. +4 d = 3

0.1

f. V

i. X

- a. v
- h. X
- e. 1/
- d. X g. X
- h. 🗸
- 4. a. 17.000 b. 19.000 c. 700 f. 21
 - d. 15.000 e. 0 g. 45
- There are $6 \times 10 = 60$ millimeters
- She ran = $7 \times 1,000 = 7,000$ meters

Cumulative Assessment b. B

1. a. A d. C

d. X

- - e. D
- a. 🗸
- b. X
- - e. 🗸
 - f. X

c. C

CV

- 3.
- a. 304×14

	300	4
10	3,000	40
4	1,200	16

- So -304 × 14 = 3.000 + 1.200 + 40 +16 = 4.256
- h 5 x 123

	100	20	3
5	500	100	15

 $50.15 \times 123 = 500 + 100 + 15 = 615$

c. 23 x 44

	40	4
20	800	80
3	120	12

 $50.23 \times 44 = 800 + 120 + 80 + 12$ = 1.012

- a. $3 \times 76 = 3 \times [70 + 6]$ $= [3 \times 70] + [3 \times 6]$ = 210 + 18 - 228
- **b.** $12 \times 213 = [10 + 2] \times [200 + 10 + 3]$
 - $= [10 \times 200] + [10 \times 10]$ $+(10 \times 3) + (2 \times 200)$
 - $+[2 \times 10] + [2 \times 3]$
 - = 2.000 + 100 + 30 + 400
 - +20+6=2.556
- c. $92 \times 34 = [90 + 2] \times [30 + 4]$
 - $= [90 \times 30] + [90 \times 4]$
 - $+[2\times30]+[2\times4]$
 - = 2.700 + 360 + 60 + 8
 - = 3,128

	54	
×	23	
	12	[3 × 4]
+	150	$[3 \times 50]$
+	80	[20 × 4]
+	1000	[20 × 50]
	1,242	

b.

a.

	341	
×	35	
	5	$[5 \times 1]$
+	200	(5×40)
+	1500	(5 × 300)
+	30	$[30 \times 1]$
+	1200	$[30 \times 40]$
+	9000	[30 × 300]

a. D b. C c. A d. B e. C

11,935

a.
$$5 \times 127 = 5 \times (100 + 20 + 7)$$

= $(5 \times 100) + (5 \times 20) + (5 \times 7)$
= $500 + 100 + 35 = 635$

- b. $36 \times 22 = [30 + 6] \times [20 + 2]$ $= [30 \times 20] + [30 \times 2]$ $+ [6 \times 20] + [6 \times 2]$ =600 + 60 + 120 + 12 792
- 4. Giovanni paid = 115 × 24 = 2760 L.E.

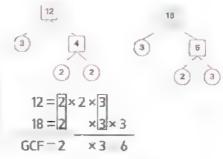
5. [13×25]	31 × 25	13 × 52	31 × 52
775	325	676	1,612

Cumulative Assessment

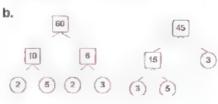


- a. V h. 🗸 C. X d. 🗸 f. X e. X
- 2.

a.



 $LCM = 2 \times 2 \times 3 \times 3 = 36$



$60 = 2 \times 2 \times 3 \times 5$ 45 = $3 \times 5 \times 3$ $GCE = 3 \times 5 = 15$

- $LCM = 2 \times 2 \times 3 \times 5 \times 3 = 180$
- 3. ①① 3, 241 ① 712 36 54 12964 4272 162050 21360 25,632 175,014 33 d. 8.50 3.64 2356 4.86
- 21.460 5.0 3.6 7.491 28.951 1.4
- 4.
- a. A = 2 3 B = 1 3 C = 2,128b. A=2, B=6, C=1, D=129.762
- 5. $A = 2 \times 5 = 10$, $B = 2 \times 20 = 40$,C~2×300 -600 D 10×5 50 $_{7}E = 10 \times 20 = 200$ ₂F = 10 × 300 3000 Final product = 3,900

Cumulative Assessment

- 1. a. 15,000 b. 100
 - c. 3.600 e. 257

d. A

8. 1/ b. X c. X d. X e. v a. B b. O c. D

e. C

d. 4.116

- 4. First factory produces in 10 months = 4.550 × 10 =45,500 toys
 - Second factory produces in $10 \text{ months} = 7,350 \times 10$ 73,500 toys
 - the difference = 73,500 45,500= 28,000 toys
- He spend 21 × 12 252 pounds The left money = 300 - 252= 48 pounds



- ment
- 1. a. 4 d. 40
- b. 25e. 2
- t. 3

- 2. a. v
- b. X e. X
- c. X f. X
- 3. a, 7,506 b. 6489 c. 45.254 d. 6 R 6
- 4. The number = (3 × 7) + 2 = 21 + 2
- 1 The number = $[3 \times 7] + 2 = 21 + 3$ = 23
- 5. 18 30₁
 - 2 3 2 5 1

$$18 = 2 \times 3 \times 3$$

 $30 = 2 \times 3 \times 5$
 $30 = 2 \times 3 \times 5$

GCF - 2 × 3 = 6

$LCM = 2 \times 3 \times 3 \times 5 = 90$

Cumulative Assessment 2

1. a. C

c. D

- d. B
- b. B e. B
- 2. a. 1,035 ÷ 9

	100	10	5
	1,035	135	45
9	900	-90	-45
	135	45	0

So
$$,1,035 \div 9 = 115$$

b. $3.813 \div 31$

	100	10	10	1	1	1
	3,813	713	403	93	62	31
31	-3,100	-310	-310	-31	-31	_31
	713	403	93	62 .	31	0
	So	, 3,813	÷ 31 =	123		

- 3. a. \(\nu \) b. \(\nu \) c. \(\nu \) d. \(\times \) f. \(\times \) f. \(\times \)
- 4. Number of bags = 16 ÷ 4 = 4 bags

16					
4	4	4	4		

Cumulative Assessment

1. 36)4,464

die .	30/4,464	
a.	-3,600	100
	864	
	- 360	10
	504	
	- 360	10
	211	

- 72 2 72 2
- <u>72</u> <u>2</u>

So $44464 \div 36 = 124$

So , 2,129 ÷ 23 = 92 R 13

b.

23) 2,	129	
-2,	070	90
	59	
	46	2
	13	

- 2. a. B
- b. C
- c. A

- d. B
- e. D
- 3. a. 86,436
- **b.** 112 R 1 **d.** 180 46
- c. 53.608
- 4. a.>
 - c. <
- b. < d. =
- 5.



Factors of 12 are 1, 2, 3, 4, 6 and 12

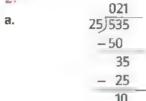
b.



Factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24

Cumulative Assessment

- 1. a. 3,432 ÷ 24 143
 - **b.** $2,950 \div 25 = 118$ **c.** $1,664 \div 16 = 104$
- 2.



 $535 \div 25 = 21 R 10$

b.

C.

0174 46) 8,004 - 46 340 - 322 184 - 184

 $8.004 \div 46 = 174$

0101 14)1,414 -14 - 014 - 14 0

- 1,414 : 14 101
- 3. a. D
- b. B e. A
- c. D

C. V

- d. D
- 4. a. X b. V
 d. X e. X
- 5.
- a. k = 4.12 2.14 k = 1.98
- b. m = 7.02 + 3.2m = 10.22

Cumulative Assessment

- 1. a. 231.14 b. 6.044
 - c. 73,623 d. 123
- 2. a. 2 b. 7.546 d. 1 e. 15
 - f. 1

C. zero

- 3. a. → 2 b. → 1 c. → 3 d. → 4
- 4. a. x b. v c. x d. v
- 5. The length of silk used

 -13,250 6,850 = 6,400 meters

 The length of wool used = 6,400

 -1,500 = 4,900 meters

 The factory used in all

 =13,250 + 6,400 + 4,900

 =24,550 metres



- 1. a. 57.6 b. 0.24
 - c. 1
- d. 0.001
- e. 5.769.14 f. 214.1
- 2. a. C
- b. C
- c. D

- d. A
- e. B
- b. = c. >
 - d. >
- e. <

4.

- a. A=100 , B=10
- b. $m 100 \Rightarrow n = 0.01$
- c. k = 10 , L = 0.1 , r = 0.001
- d. S = 7043

Cumulative Assessment

- 25
- **1. a.** 0.76 **b.** 1,064
 - e. 16.000.016
- f. 10.839
- 2. a. → 2 b. → 4 c. → 3 d. → 1
- 3.
- a. 2 0.5 7 14 3.5 0.4 0.8 0.2

Product = 185

 b.
 2
 0.5
 0.08

 3
 6
 1.5
 0.24

 0.5
 1
 0.25
 0.040

Product = 9.03

- 4. a. 33774
- b. 7.469
- c. 4,250
- d. 153 R 5

- 5.
- a. 4 0.2 5 20 1 0.6 2.4 0.12

$$4.2 \times 5.6 = 20 + 1 + 24 + 0.12$$

= 23.52

- b. 3 0.2 0.05 1 3 0.2 0.05 0.2 0.6 0.04 0.010
 - $1.2 \times 3.25 3 + 0.2 + 0.05 + 0.6 + 0.04 + 0.010 = 3.9$

Cumulative Assessment

- 1.
- a. 1,74 b. 53 28 × 3.5 × 7.9 870 47952 + 5220 + 372960 6 090 420.912
- c. 2.03 x 07 1.421
- 2. a. < b. > c. = d. < e. <
- **3. a.** 3,030.3 **b.** 5.61 **c.** 7521.4 **d.** 1 **e.** 54
- 4. a. C b. C c. D d. C e. A
- 5. m=3 n=028 m+n=3+0.28=3.28

Cumulative Assessment

- 1. a. 0.01,1.45
 - **b**. 17.4
 - c. Hundredths
 - d. Three and three thousandths
 - e. 777.7
 - f. 1.242
- 2. a. C b. A c. C
 - d. D e. B f. C
- 3. a. \(\nu \) b. \(\times \) c. \(\nu \)
- 4.

1.

- a. 590 m $_{2}$ 0.65 km $_{2}$ 705 m $_{2}$ 0.8 km
- b. 325.7 mL + 0 55 L,+0.59 L + 806 mL

Cumulative Assessment

- a. C b. A c. D
- d. B e. A
- 2. a. tenths b. 21 c. 3 d. 1.000 e. 3.333
- 3. a. x b. v c. v
 - d. x e. ✓
- 4. The drank juice = 570 mL + 330 mL = 900 mL

The remaining juice
1,000 mL = 100 mL

5. The total = 85.7 kg + 94,560 g + 75.6 kg = 85.7 + 94.56 + 75.6 = 255.86 kg

Cumulative Assessment 2

- **1. a.** 0.058 **b.** 700 **c.** 1270 **d.** 0.07 **e.** 253.6 **f.** 0.074
- 2. a. 5,100.5 b. 4,716.2 c. 5.234
 - d. 0.019 e, 7.6 f. 5,146
- 3. a. 100 b. 3.27 c. 10 d. 25.1 e. 1.465.2 f. 0.01
 - g. 0.1 h. 0.001 i. 100 i. 1,000
- 4. a. > b. > c. < d. < e. < f. =
- 5. The price of 100 toys = 15.5 × 100 = 1550 pounds
- 7.25 km = 7250 m
 Giovanni walked each day
 = 7250 ÷ 10 = 725 m

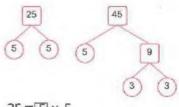
Cumulative Assessment 30

- 1. a. 5 b. 3
 2. a. B b. B c. D
 - a. B b. B c. D
 d. B e. B e. D

- 3. a. \(\nu \) b. \(\times \) c. \(\times \) d. \(\nu \) e. \(\nu \)
- **4. a.** 228.17 **b.** 134.32 **c.** 48,210 **d.** 251

Cumulative Assessment

- 1. a. 21.6 ,72 ,0.3 b. 889 ,35 ,25.4 c. 0.084 d. 6.67
- 2. a. 2.225 b. 13.7 c. 1.1 d. 1.45
- 3. a. C b. B c. D d. B e. C f. B
- 4. You find HCF of 25 and 45



 $25 = 5 \times 5$ $45 = 5 \times 3 \times 3$ HCF = 5

So , the wide equal 5 cm

5. Price of socks = 12 × 18 = 216 pounds the left money = 300 – 216 = 84 pounds

Cumulative Assessment

- 1. a. D b. B c. C d. A e. B
- 2. a. x b. v c. x d. x e. x f. v
- 3. The length of each piece of wire $= 3.45 \div 15 = 0.23 \text{ m} = 23 \text{ cm}$
- 4. The rest = 125,000 31,250 = 93,750 L.E.

The value of each instalement = $93,750 \div 72 \approx 1302$ L.E.

Unit 6

Cumulative Assessment

- a. 481 b. 183,3 c. 26 d. 781 3
- 2. a. = b. > c. < d. > e. < f. >
- 3. a. D b. A c. A d. C e. C f. B
- a. $[7-4] \times [5+1]$ b. $9 \times [3+2] \div 5$

4.

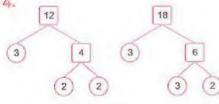
Cumulative Assessment

- L. a. 9 b. 60 c. 100 d. dividend e. 675.1 f. 100
- 2. a. v b. x c. v d. x e. v f. x
- 3. a. $[3.4 + 3.1] \times 10 = 6.5 \times 10 = 65$ b. $[7.54 - 3.1] \div 4 = 4.44 \div 4 = 1.11$
 - c. $93 \div 0.3 + 211.7 = 310 + 211.7$ = 521.7
 - d. $[(3.5 \times 100) 54.5 + 13.4] \div 0.01$
 - $= [350 54.5 + 13.4] \div 0.01$
 - $= [295.5 + 13.4] \div 0.01$
 - $=308.9 \div 0.01 = 30890$
- 4. a. → 3 b. → 1 c. → 4 d. → 2

Cumulative Assessment

- 1. a. 6,3 [n+2] b. 21,30 [n+3]c. 16,12 [n-4] d. 1,22 [n+7]
- 2. a. 50,45,40,35,30 b. 7,9,11,13,15 c. 40,20,10,5,2.5 d. 2,45,12,345,102
- 3. a. x b. x c. v d. v e. x





$$12 = 2 \times 2 \times 3$$

$$18 = 2 \times 3 \times 3$$

$$GCF = 2 \times 3 = 6$$

 $ICM = 2 \times 2 \times 3 \times 3 = 36$

- b. 46.112 a. n×2 c. 51320 d. 6.2
- a. V b. V C. V f. X d. X e. X
- a. 358.201 b. 115.157 d. 25 c. 4173
- 4. a. 9 b. A. = 12 B. = 14 C. = 19D. = 19 $E_{.} = 24$
- 5. The greatest number = 50.1 - 5.999 = 44.101

Answers of Final Assessments

Model

- 1. a. C b. B c. C d. A
- 2. a. 3 b. n+2 c. 0.03
- 3. a. X b. X CV
- a. —→2 b. ----1 C. ---- 4 d. — → 3
- 5. 70 5 a. 20 1.400 100 3 210 15

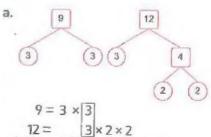
Then $,75 \times 23 = 1,400 + 100 + 210$ +15 = 1,725

b. Mona needs = 2 - 1.275 = 0.725

Model

- a. 4.49 1. b. 0 c. 1, 2, 3, 4, 6 and 12 d. 0.06
- 2. a. C b. A c. B 3. a. 🗸 b. X C. X
- b. —→3 c. ---1

5.



GCF = 3 $LCM = 3 \times 3 \times 2 \times 2 = 36$

b. The sum of length of 3 sides $= 3.4 + 4.7 + 3.15 = 11.25 \,\mathrm{m}$ x = 13.5 - 11.25 = 2.25 m.

Model

- 1. a. X b. X C. V a. 1 b. 20 c. 100
- b. C a. B d. B c. C
- 4. a. → 2 b. 1 c. —→3

5.

100 10 1 a. 2,576 276 46 23 23 -2,300-230-23 -23276 46 23

Then ${}_{2}$,576 \div 23 = 100 + 10 + 1 + 1 = 112

b. Number of bags = $18 \div 3 = 6$ bags.

Model

- 1. a. D.
- b. D
- c. C
- d. A
- a. 53
- b. 11.3
- a K
- b. V
- CV

c. 0.057

- d. ----3

- 5.
- a. Total number of kebabs = 301 + 532 = 833 kebabs.

She used = $833 \times 51 = 42,483$ grams.

- b.
- 18) 576 - 180 | 10 396 - 180 | 10 216 - 180 | 10 36 - 36 | 2

Then $_{2}576 \div 18 = 10 + 10 + 10 + 2 = 32$

Model

- 1. a. 2.6
- b. 2
- €. 60

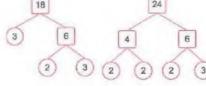
- a. B
- b. C
- c. B
- d. A

- 3. a. X b. X C. V
- c --- 4 d. --- 3
- 5.
- a. [1] 152 R1
- [2] 4.815
- b. blue paper = 15.730 4.510= 11.220 papers.

Total number of papers = 15.730 + 11.220 = 26,950 papers.

Model 6

- a. C b. D
- c. B
- d. A
- a. V b. X C. V
- 4. a. 1 b. 28 c 3.3,2.2
- 5.
- a. [1] 3.676
- [2] 383.553



 $18 = 2 \times 3 \times 3$ $24 = 2 \times 3 \times 2 \times 2$ $LCM = 2 \times 3 \times 3 \times 2 \times 2 = 72$

- 1. a. tenths b. 70,707 c. 5.57
- a. X b. X C. X
- 3. a. D b. D c. B d. D
- 4. a. —→3 b. ----2 c. ---->1
- 5.
- a. They saved = 17.25 + 8.5= 25.75 pounds
- b. The expression: $[4.6 3.1] \times 0.01$ The evaluation:

 $[4.6 - 3.1] \times 0.01 = 1.5 \times 0.01 = 0.015$

Model 8

- 1. a. X b. w C. V
- a. C b. D c. D d. A
- a. 0.007 b. 7 c. 91.36
- c. --- 2 d, —→3

- 5.
- a. [1]T = 2.45 + 0.26
- T = 2.71
- [2] K = 3.04 2.40
 - K = 0.64
- $b.55 \div 5 \times 10 = 10$
 - $= 1.1 \times 10 10$
 - =11-10=1

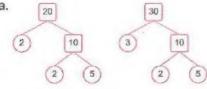
Model 9

- a. D b. A
- c. C d. D
- a. 0.01 b. 2 - 1 c. 3.33
- 3. a. v b. 30 C. V
- $b. \longrightarrow 3$ c. --->1
- a. 49.25 b. 5.4
 - c. 384 d. 211

10 Model

- 1. a. B b. C
 - c. B d. A
- 2. a. 3,900 b. tenths c. 532.4
- 3. a. x b. V C. X

a.



$$GCF = 2 \times 5 = 10$$

$$LCM = 2 \times 2 \times 5 \times 3 = 60$$

b. The maker has 0.85 kg. = 850 gram. He used = 850 - 226 = 624 gram. Number of rings = $624 \div 4$ = 156 rings.

NOTE	5	3

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